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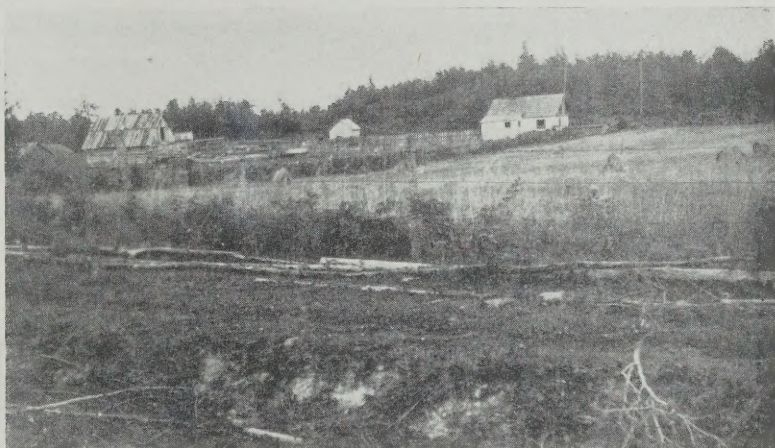
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DOMINION OF CANADA—DEPARTMENT OF AGRICULTURE

PIONEER FARMING AND MUNICIPAL FINANCE IN THE SANGUDO-WINFIELD AREA OF ALBERTA 1941

B. K. ACTON AND C. C. SPENCE



A Settler's Farmstead on the Grey Bush Soil of Tomahawk Municipality

MARKETING SERVICE, ECONOMICS DIVISION
DOMINION DEPARTMENT OF AGRICULTURE

IN CO-OPERATION WITH

THE DEPARTMENT OF POLITICAL ECONOMY
UNIVERSITY OF ALBERTA



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FOREWORD

THIS is the first in a series of reports on investigations dealing with land settlement problems in the woodland areas of Alberta. These investigations have been undertaken by the Economics Division, Marketing Service, Dominion Department of Agriculture in co-operation with the Department of Political Economy, University of Alberta. They are a part of a broader enquiry into the economic and social problems arising out of the present use of the land in Western Canada, instituted under the Prairie Farm Rehabilitation Act.

In this particular study which deals with land improvement, farm organization and income in a comparatively recently settled woodland area of western Alberta, the authors desire to acknowledge the generous co-operation of several hundred settlers in that area who provided much of the basic data. R. J. Bowring, W. J. Anderson, W. Hedlin, and J. H. Younie helped in the collection and analysis of the data. Professor Andrew Stewart of the University of Alberta assisted in the direction of the study and in the preparation of the report. Acknowledgments are also made of the valuable suggestions offered by other members of the University staff, as well as by officers of the Alberta Departments of Agriculture and of Municipal Affairs.

SUMMARY OF THE MORE IMPORTANT FINDINGS AND CONCLUSIONS

Part I.—Pioneer Farming in the Sangudo-Winfield Area of Alberta

1. The area included in this study extends nearly 100 miles south from the town of Sangudo which is located about the same distance northwest of Edmonton. It is what may be termed a "pioneer" or "fringe area". The study was conducted in 1941.

2. The 240 farms were considered as falling into two broad classes—Subsistence and Commercial—and were so grouped for purposes of analysis. Each of these classes was in turn divided into three sub-classes. The period for which the settlers included in the various sub-classes had been farming in this area averaged from 9 to 16 years.

3. A substantial part of the income of Subsistence farmers was obtained from sources other than farming. Income from pensions, and from such work as lumbering, hauling and other trades, averaged \$345 per farm for one sub-class and \$404 for another in the year of the study. Average cash receipts from farming operations in the different sub-classes ranged from \$226 to \$341 per farm. Cash expenses varied from an average of \$121 to \$213.

4. The type of farming most suitable for this area was found to be one involving a combination of crops and livestock, with emphasis on the latter.

5. On commercial farms of this type with 76 acres or more under cultivation the cash receipts for the year of the study averaged \$1,141 while cash expenses were \$509.

6. Because of lack of capital the progress of settlers in bringing land under cultivation has been extremely slow—about three or four acres per year.

7. The average amount of initial capital possessed by those classified as "Commercial farmers" was about \$1,000. In 1941—twelve years after settlement—only about one-fourth had as much as 75 acres of land under cultivation.

8. Under favourable conditions—fertile soil, close proximity to markets, satisfactory prices and good weather—the right kind of settler can become established with but a limited amount of capital. Under average conditions, however, and for most settlers, inadequate capital has meant years of struggle on a comparatively low level of living.

9. A farmer who settles in this or similar fringe areas of Alberta should have at the outset, or within a few years at the most, sufficient improved land to provide himself and family with a reasonable level of living, and to permit at the same time, the development of the farm. A half section of land with 75 acres improved is suggested.

10. On a farm with such an area under cultivation, minimum capital requirements, exclusive of both land and land improvement, would be about \$2,650. Land in fringe areas has negligible value until improved, but the cost of improvement would represent an additional \$900, approximately.

11. In all but one of the six groups of farms average expenditures for family living approximated or exceeded \$300 for the year. This was greater than the value of direct contributions of the farm in the form of house rent, produce and fuel, by amounts ranging from \$50 to \$100.

**Part II.—Problems Associated with the Development and Maintenance
of Rural Municipal Services in Tomahawk Municipal
District in Alberta**

1. A study was made of the records of Tomahawk Municipality No. 521 (one of the Municipalities included in the Sangudo-Winfield Area) in order to determine the ability of the farmer on the frontier of settlement to pay taxes, with which to develop and maintain the municipal services which may be considered as essential to a community.

2. The main functions of municipal government are the levying and collecting of taxes to be disbursed on the maintenance of essential services within the community.

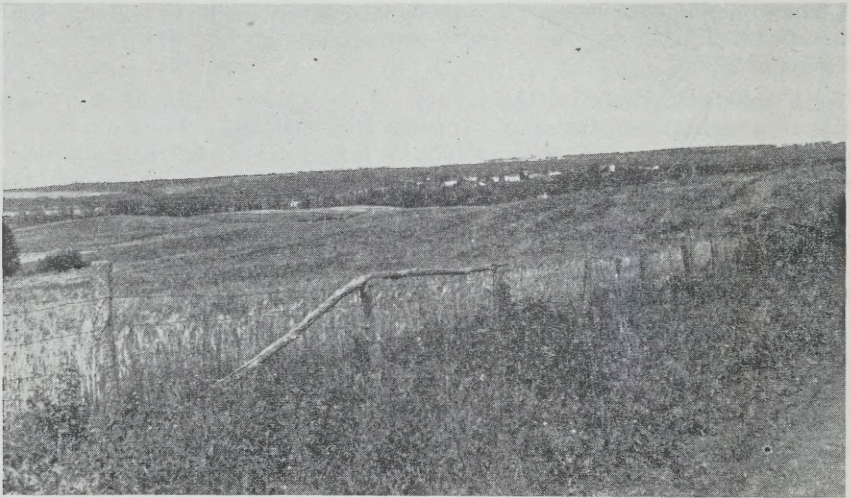


FIG. 1.—Transition clay near the town of Sangudo.




FIG. 2.—Farmstead on grey wooded soil and showing heavy bush cover in background

3. The general conclusions drawn from this study are:

- (a) Social services must be paid out of current tax revenue. Adequate provision should be made for meeting all cash commitments before work is accepted as payment on taxes.
- (b) Adequate provision for meeting cash commitments may mean larger grants from higher governmental authorities.
- (c) In municipalities, such as Tomahawk, where extraordinary expenditures cannot be made out of current revenues, and must be carried as indebtedness into succeeding years, there is little likelihood that the debt can be liquidated out of the ordinary revenue of the Municipality.
- (d) Maintenance of schools is a problem of the Municipality. When the taxes received from the school levy are not enough to keep the schools in operation, funds must be taken from general revenue.

4. Settlement has existed in the Tomahawk District upwards of thirty years, but the area may still be classed as "pioneer". While the foregoing statements are based on a study of the local government of Tomahawk, they apply equally to any Municipality in a stage of pioneer development. One probable means of avoiding the problems encountered by the Tomahawk District is to delay organizing into a municipal unit with local self-government, until the area is sufficiently well developed to provide an adequate tax base.



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PIONEER FARMING AND MUNICIPAL FINANCE IN THE SANGUDO-WINFIELD AREA OF ALBERTA, 1941¹

B. K. ACTON² and C. C. SPENCE³

PART I

PIONEER FARMING IN THE SANGUDO-WINFIELD AREA OF ALBERTA

Settlement Problems

Early in the war it became apparent that interest in land settlement in Alberta was likely to increase when hostilities ceased. It was apparent, too, that this interest would lead to a demand for more information on certain aspects of land settlement than was then available. Accordingly, it was decided that a study should be undertaken to acquire the necessary information.

Such a study, it was felt, should deal with actual experiences in a region where settlement had taken place in comparatively recent years and where the problems encountered were similar to those that would be met in sections of the province yet to be developed.

An area in west central Alberta to which the title "Sangudo-Winfield" has been applied was considered as meeting the requirements outlined. The area is one in which settlement has been in progress for some years but which still provides many examples of pioneer farming and most of the characteristics of a fringe area. It is woodland country where the provision of roads, the clearing of land and the improvement of soil fertility are major problems—problems that will also be experienced in other parts of Alberta as settlement proceeds.

Purpose of the Study

In these newer sections of the province where woodland conditions prevail, soil surveys and studies of the physical properties of the soil have been made. Experimental work has also been undertaken to determine the most suitable kinds of crops, cultural practices and fertilizers. Little effort has been made, however, to assemble information on the financial aspects of farming in such areas. It was to remedy this defect that the study dealt with in this report was undertaken.

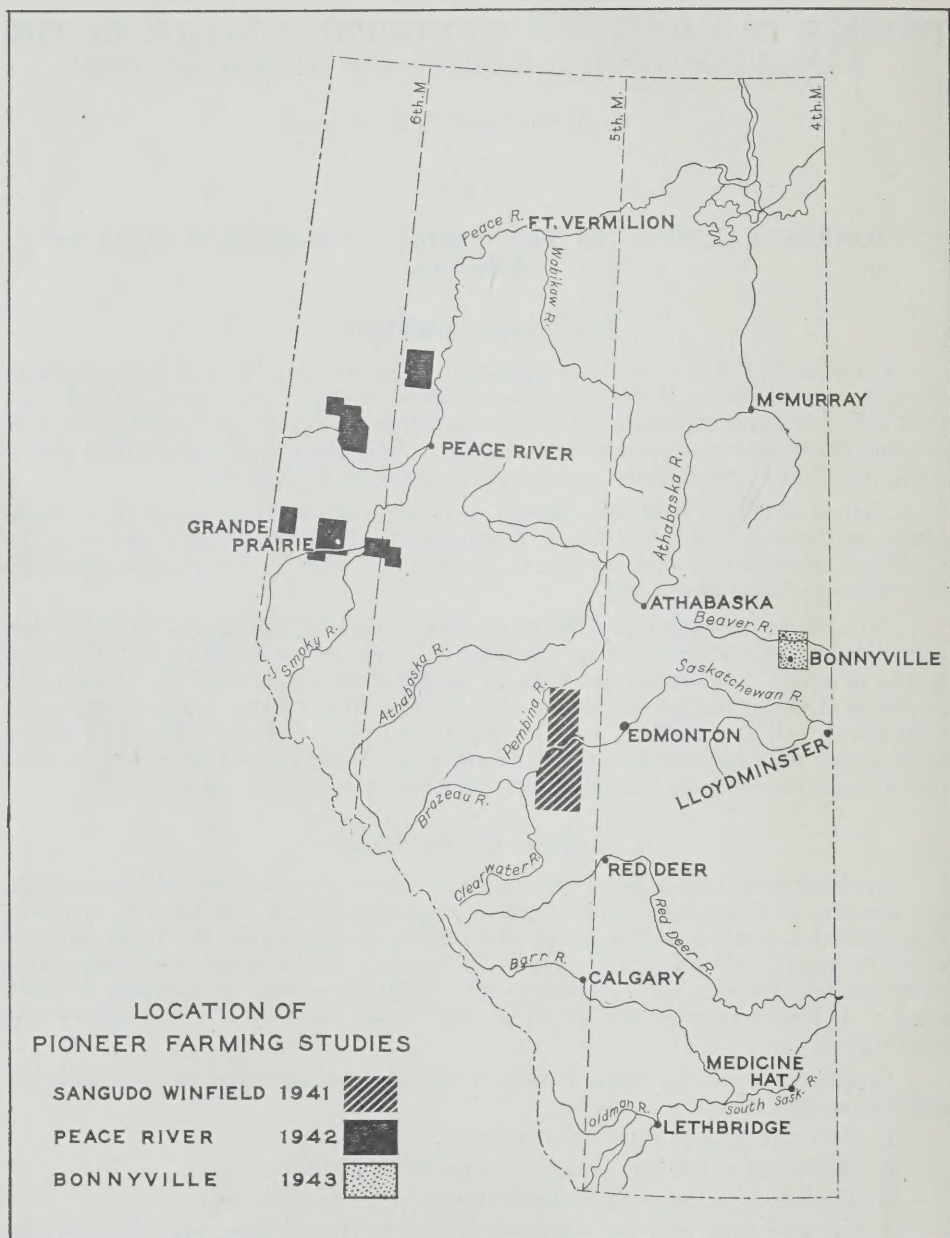
In specific terms the study may be considered as intended to provide information on the following matters:

1. Cost and rate of land improvement.
2. Minimum capital necessary to establish a farm.
3. Type of farming most suitable to the fringe area studied.
4. Returns that may be anticipated from a typical farm and the expenses necessary for operation.
5. The level of living the settler may be able to maintain.
6. The direct contribution of the farm to the family living.
7. The time required to become established.

¹ A study conducted by the Economics Division, Dominion Department of Agriculture in co-operation with the Department of Political Economy, University of Alberta.

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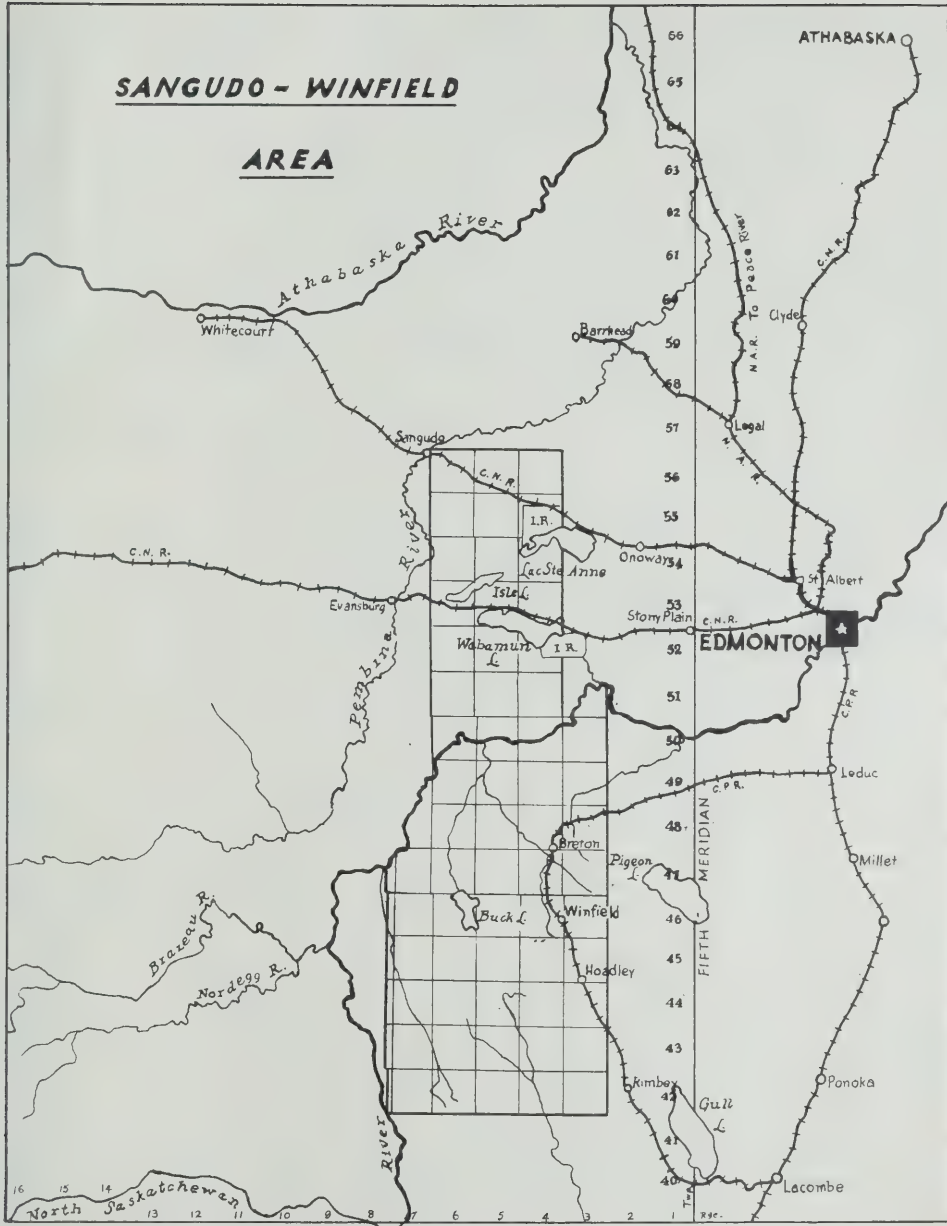


Description of the Area Surveyed

The Sangudo-Winfield Area is located on a north and south line, extending from a point one hundred miles northwest of Edmonton (Sangudo) to a few miles west of Rimbey. This area comprises: M. D. 551, M. D. 521, M. D. 431, I. D. 491, I. D. 461 and parts of M. D. 490, M. D. 460, I. D. 462, and I. D. 432.¹

¹ An M.D. is a Municipal District or Municipality—that is, an organized district having local self-government.

An I.D. is a Local Improvement District—that is, an unorganized district which is administered by the Provincial Department of Municipal Affairs.



The territory as surveyed is divided into three sub-districts, namely:

1. Sangudo or M. D. 551.
2. Tomahawk or M. D. 521.

3. South of North Saskatchewan River.—This includes the other named municipal units, and these extend south from the North Saskatchewan River.

Physical Characteristics.—*Climate.*—The climate is characterized by long, bright, moderately warm summer days, and a bright, cold, dry winter.

High winds and Chinooks¹ are few, resulting in a layer of snow remaining over the ground during the winter months. The climate in the area surveyed is very similar to that of the Edmonton district in regard to precipitation, hours of sunshine, temperature, and frost-free periods.

For a twenty-year period the average precipitation at Edmonton was 18.08 inches. In contrast to this, the precipitation at Medicine Hat, in the drought area, was 12.04 inches. Approximately two-thirds of the precipitation comes during the growing months of May to August inclusive. The stability of agriculture is greatly affected by the year to year variability of precipitation. Although Edmonton and the area surveyed are subject to this variability, it is not so marked as in the drier regions of the province. For the period 1904 to 1927 the low and the high at Edmonton were 12.94 inches and 22.11 inches, whereas at Medicine Hat these were 6.86 inches and 25.28 inches respectively.

Hours of sunshine per year is a factor which influences crop production. Edmonton averages 2,200 hours per year as compared with Winnipeg at 2,000 hours per year.

Likewise the frost-free period, which is affected by elevation, precipitation and sunshine influences crop production. The 1915 to 1926 average frost-free period at Edmonton was 89 days, Calgary 95 days and Medicine Hat 130 days. The shortest and longest frost-free periods during this time at Edmonton were 52 days and 123 days respectively. However, the late spring and early fall frosts are usually too light to damage grain crops.

The mean average yearly temperature 1885 to 1914 was 36.9° F.; the mean by seasons was 10.8° for the winter, 38.5° for the spring, 59.2° for the summer and 38.9° for the fall months.

The Edmonton district is one of relatively high fertility. Although the climate of the Sangudo-Winfield Area is comparable with that at Edmonton, the soil and topography are not so favourable to agricultural production.²

Watersheds.—The North Saskatchewan River is the southern boundary of Tomhawk M.D. and the Pembina River is a part of the western boundary of Sangudo or M. D. 551. The height of land between the two rivers forms a watershed, the Pembina flowing eventually into the Arctic Ocean and the North Saskatchewan into Hudson Bay. The high land west of Winfield is a watershed between the North Saskatchewan River and the Red Deer River farther to the south. The elevation of the Sangudo-Winfield Area varies from 2,300 to 2,900 feet above sea level, increasing towards the west.

Lakes are numerous and of varying size. A part of Lake St. Ann lies in the eastern part of the Sangudo district. Isle Lake and Lake Wabamun form a natural boundary between Sangudo and Tomahawk sub-districts. Low Water Lake, a large flat hay basin, in the Tomahawk area, is about one-half township in size. Several years ago this lake was drained into the North Saskatchewan River to make land available for agricultural purposes, but the soil was found unsuitable. Today, the central part of the lake is a large marsh, and the outer fringes provide excellent wild hay land. Buck Lake, the largest single body of water south of the North Saskatchewan River (within the area), is about twenty miles west of Winfield.

¹ Chinook.—A warm, dry, gusty wind which blows from west or southwest over the mountains, sweeping down the eastern slopes to bring higher temperatures.

² Wyatt, F. A., J. D. Newton and T. H. Mather, "Soil Survey of St. Ann Sheet", University of Alberta. Extension Bulletin No. 20, April, 1930.

Topography.—The topography of a region determines to a marked degree the amount of land that is economically arable. The topography of the Sangudo-Winfield Area varies from a gentle slope to steeply rolling. In general, the areas of most favourable topography have the better soils.

The muskegs or peats, which are quite numerous, are flat. They vary in size from a few acres to a section or more. As yet in this area, the farmers have made only limited efforts to cultivate them.

Lands with the more favourable topography comprise about a township near the town of Sangudo, and nearly two townships around the settlement of Tomahawk. This latter area extends south of the Saskatchewan River about twelve miles. Farther south, in the area west of Winfield, there are fairly broad valleys running east and west. The valley land is gently rolling in character and suitable for agricultural development. The topography of the remainder of the area is gently to steeply rolling.

Soils.—The Sangudo-Winfield Area is part of the grey wooded soil zone. Grey wooded soils are light in colour, possess little organic matter and are deeply leached. The nitrogen, sulphur, potassium and phosphorus contents of the soil are quite low. Grey wooded soils vary in texture from sands to clays. The grey wooded soil in the area surveyed is chiefly of a loam to silt loam texture.

Within the grey wooded soil zone areas of incipient podsollic soils occur; these are the transition between parkland and wooded soils and are darker in colour and more productive than the grey wooded soils. The texture of the transition soils may also vary from sands to clays, but those found in the area surveyed are mostly clays and clay loams.

Peat soils exist in the muskeg areas, and consist mainly of organic matter underlaid by clay or other compact soil material which holds the moisture in basins or flats. The peats are formed from the decaying of sphagnum mosses and other moisture loving plants. In order to bring this peat land under cultivation it is necessary to drain the bog or muskeg. Cultivation of peat land is more satisfactory if the drained bog is trampled by stock pasturing on it for a few years before breaking.

Native Vegetation.—Generally speaking, where not cultivated, the area surveyed has a bush cover. The extent and density of the cover vary with the topography and soil. Poplar and willows grow on the grey bush soils, and generally a less dense growth is associated with a lighter wooded texture soil. Where sand ridges occur pine is often found, and in places the trees are of sufficient size for lumber. Spruce is also found in the area and is the chief source of lumber. There are poplar groves on the transition soils, but the stands resemble those of a parkland country with open meadows. Some of the muskegs are quite open, while others are covered with small coniferous growth.

Woodland grasses grow throughout the woods and meadows, but these are not highly nutritious for feeding. However, native legumes, such as white Dutch clover, pea vine, and vetch, are common in the area and grow well in open spaces. Where altaswede and alsike have been introduced volunteer plants of these grow along roadsides and in meadows and thus provide a valuable and inexpensive pasture.

Services and Industries.—The town of Sangudo is situated on the Edmonton-Whitecourt branch of the Canadian National Railway. This line was built as far as Sangudo in 1914, and the influx of settlers commenced about the

same time. Constructed in 1910, the main line of the Canadian National Railway (then the Grand Trunk) crosses the area north of the Saskatchewan River, by following the north shore of Wabamun Lake.

As a progressive business centre, Sangudo offers to the agricultural public the following farm services:

1. The Sangudo-Mayerthorpe and District Seed Growers' Co-operative Association Limited.—The seed cleaning plant, constructed in 1939, shipped in 1940, 310,000 pounds of timothy, alfalfa, and clover seed.
2. The Sangudo Co-operative Livestock Shippers' Association.—This organization ships about 2,000 hogs and 350 head of cattle per year.
3. The Sangudo Creamery constructed in 1938.

Other smaller towns that serve the farming community of Sangudo district are Cherhill and Glenevis. Along the main line the small hamlets of Gainford, Fallis, Wabamun, and Duffield, provide shipping facilities for both the Sangudo and Tomahawk districts.

The district of Tomahawk centres around the settlement of Tomahawk, about eighteen miles south of the railroad. Here there is a co-operative store, and the homes of truckers who haul cream and livestock direct to Edmonton.

The Leduc-Lacombe branch of the Canadian Pacific Railway (completed in 1931) skirts the eastern edge of the district south of the North Saskatchewan River. The main towns are Breton, Winfield, and Rimbey, the last mentioned being outside the area. Winfield is the centre of a large lumbering industry that employs about 2,000 men. Pioneers in this area preceded the railroad and they obtained part-time employment in the lumber industry. At Warburg, east of Breton, a seed cleaning plant has been established, and as a result the production of legume seed is being encouraged on the grey wooded soils around Breton and Winfield. There are creameries at Bluffton to the south and at Calmar near Leduc.

Roads generally are adequate though in places they are poor. A main road, partly gravelled, has been constructed from Edmonton to Sangudo. The Edmonton-Jasper highway, an all-weather road, parallels the main line of the Canadian National Railway. A graded dirt road connects the Breton-Winfield district with Pigeon Lake, thirty miles to the east, from which point a gravelled road leads to the Calgary-Edmonton hard surfaced highway. The other roads within the whole area are graded dirt or trails, depending upon the concentration of settlement and their use.

Schools are located throughout the rural areas and also in the towns. At each of the towns of Tomahawk, Sangudo, and Rimbey there are medical practitioners; and hospital accommodation in the two latter towns.

Industries of note other than agriculture in the Sangudo-Winfield Area are fishing, mining, and lumbering. Commercial fishing is done in the several large lakes previously mentioned. Coal is mined within or adjacent to the Sangudo-Winfield Area. The Lake Side Coal Mine is located on the north shore of Wabamun Lake, and farther west across the Pembina River is situated the coal mining town of Evansburg. Commercial timber is limited in extent north of the Saskatchewan River, but to the south, about thirty miles west of Winfield, are located some of the largest lumber camps in the province. Plants for milling the lumber are established in the vicinity of the town of Winfield.

General Trends in the Surveyed Area

Some farmers have been established in the Sangudo-Winfield Area for over thirty years. The population in 1916 (Table 1) was 2,420, growing to 12,031 in 1941. The number of farms for the same period has shown an increase from

687 to 2,492 units. The owner farms form by far the largest group of land operators. The same was true respecting those farmers interviewed during the survey; 203 were owners, 29 part owners, and 8 renters.

TABLE 1.—POPULATION, NUMBER OF FARMS, AND TENURE, 1916 TO 1941¹

Year	Rural Population	Number of Farms	Owners	Tenants	Part Owners
	No.	No.	No.	No.	No.
1916.....	2,420	687	— ²	— ²	— ²
1921.....	3,486	1,035	911	50	74
1926.....	4,009	945	767	73	105
1931.....	6,349	1,461	1,240	78	143
1936.....	8,557	2,096	1,628	141	197
1941.....	12,031	2,492	2,031	183	278

¹ Census of Canada.

² Data not available.

As land was occupied, improvement took place, but not at a rapid rate. The total acres in occupied farms (Table 2) were about four times greater in 1941 than in 1916, and during the same twenty-five year period, the total acres improved increased seven times.

TABLE 2.—TOTAL ACRES, ACRES IMPROVED, AND ACRES IN FIELD CROPS OF OCCUPIED FARMS, 1916 TO 1941¹

Year	Total Acres	Total Acres Improved	Total Acres Field Crops	Percentage Farm Land Improved
	Ac.	Ac.	Ac.	%
1916.....	125,923	21,482	15,444	17.0
1921.....	217,545	33,703	26,931	15.5
1926.....	218,188	47,206	36,214	21.6
1931.....	330,110	73,329	55,935	22.2
1936.....	452,695	100,224	69,034	22.1
1941.....	561,003	148,174	114,913	26.4

¹ Census of Canada.

Table 3 shows the increase in livestock population over the period 1916 to 1941. Between 1936 and 1941 there was a considerable expansion in production of both hogs and sheep.

TABLE 3.—LIVESTOCK POPULATION, 1916 TO 1941¹

Year	Horses	Cattle	Swine	Sheep
	No.	No.	No.	No.
1916.....	2,228	6,341	3,277	573
1921.....	— ²	— ²	— ²	— ²
1926.....	— ²	— ²	— ²	— ²
1931.....	6,037	9,934	11,592	3,949
1936.....	7,124	17,046	9,148	6,629
1941.....	10,179	20,278	31,060	11,214

¹ Census of Canada.

² Data not available.

Current Economic Factors Affecting Farming in the Sangudo-Winfield Area

The current demands and prices for agricultural commodities at the time of the survey, 1941, were not representative of the period since the Sangudo-Winfield Area was settled. Grain prices were relatively low as compared with livestock prices, and hence livestock production was more profitable than the production of grain for direct marketing. Livestock farms in the Sangudo-Winfield Area were in a distinctly advantageous position as compared with farms producing saleable grain crops. It was equally as profitable for the man with a small cultivated acreage, to purchase feed and market it through livestock, as for the man with the larger acreage under cultivation.

There are certain influences that help to retard or accelerate the development of any agricultural community; unfortunately the influences have been unfavourable in the area under review. The farmers in the Sangudo-Winfield Area settled on farms where the improvement of the land is a slow laborious process. Many of them also settled on their farms just previous to, or during the depression, and received very low prices for the limited amount of farm produce sold, and many were on relief during this period. These difficulties have not been conducive to the settlers maintaining at all times the individual initiative and ambition found in districts where natural conditions and the time of settlement were more favourable to rapid development.

Sources of Data

During the summer of 1941 a field party studied the Sangudo-Winfield Area, visiting 240 settlers and securing from each a record of the farm business for the previous crop year. Information was obtained from each co-operator on the history of the land, its utilization, receipts and expenses, indebtedness, living costs and family history. Much other related data were also obtained. This information was later analysed in order to secure a representative picture of returns on farms in the Sangudo-Winfield Area.

Municipal and provincial government records provided added material on tax delinquency, agricultural relief, indebtedness, and other related data, that have been helpful in the analysis.

Land Acquisition

In Western Canada the most common way of a settler acquiring land from the Crown was by homesteading. This was probably true of the Sangudo-Winfield Area; but at the time of the survey more of the farmers had acquired their holdings by purchase than by other means (Table 4). Some of the present operators had purchased the homesteads of original settlers, while others pur-

TABLE 4.—METHOD OF ACQUIRING LAND

(First Acquisition)

Land Acquisition	Number of Farms	Percentage
	No.	%
Homestead.....	103	43
Soldier's Grant.....	6	2
Purchased.....	114	48
Legacy.....	8	3
Rented.....	9	4
Total.....	240	100

chased from land companies. The purchase price for most of the land ranged from \$2 to \$5 per acre. Under the Provincial Lands Act, 1939, homestead privileges, which then existed, were abolished.¹

Progress of Settlers in Improving Land

Progress of settlers in improving land has been extremely slow (Table 5). This has been due to a lack of power equipment and of capital. Until recent years all of the land clearing has been done by hand. The following figures indicate the scarcity of power equipment on farms:— There were only 33 cars, 6 trucks, 49 tractors, and 11 separators found on the 240 farms visited, and much of this machinery was in a dilapidated state and in disuse.

TABLE 5.—AVERAGE PROGRESS OF SETTLERS IN IMPROVING LAND DURING THE FIRST FOURTEEN YEARS ON THE FARM

Years on Farm	Number of Farms	Cumulative Land Improved per Year
	No.	Ac.
First.....	157	2.14
Second.....	155	4.88
Third.....	140	8.00
Fourth.....	130	12.13
Fifth.....	122	15.55
Sixth.....	113	18.90
Seventh.....	101	22.53
Eighth.....	93	26.73
Ninth.....	86	30.26
Tenth.....	80	34.42
Eleventh.....	64	39.01
Twelfth.....	54	44.27
Thirteenth.....	40	48.27
Fourteenth.....	40	51.57

On an average only three or four acres of land are cleared and broken each year. This has resulted in an average of about 52 acres being brought under cultivation per farm at the end of fourteen years of settlement. This slow progress is an impediment to the establishment of efficient farm units. The amount of land that a farmer is able to improve each year depends upon the type of timber cover, the aptitude of the individual for physical labour and the capital he has either in the form of equipment or money.

With the proper equipment it is now possible to bring land under cultivation at approximately \$12 per acre. For clearing, the cost, depending upon the type of cover, will range from \$2 to \$8 per acre; and root picking, breaking and disking will average another \$8 per acre. Consequently, although the farm may have been acquired at a price less than \$5 per acre by the time it is sufficiently improved to return adequate income the land is quite expensive. With this in mind, the proper type of farming must be chosen for the returns to pay operating expenses plus the cost of the land and its improvement.

The Fertility of the Soil

The 1940 average yields of wheat, oats, and barley are given in Table 6, for the Sangudo-Winfield Area, Crop District No. 12, and the province of Alberta. In addition the twenty-year average yield (1921 to 1940) for these principal grain crops is shown for Crop District No. 12 and the province of Alberta.

¹ All Crown lands are now acquired for farming purposes either by Agricultural or Cultivation Lease. In the first instance, up to one-half section of 50 per cent arable land is leased for a twenty-year period. After ten years, the tenant is given the option of purchasing the land, at a price based upon a fair valuation. The Cultivation Lease is given for a ten-year period, provided the parcel of land is one-third arable. No option to purchase is given with a Cultivation Lease. Under either method improvements up to a certain limit must be made each year.

TABLE 6.—AVERAGE YIELDS PER ACRE OF PRINCIPAL GRAIN CROPS, FOR SANGUDO-WINFIELD AREA, CROP DISTRICT No. 12. AND PROVINCE OF ALBERTA

	Sangudo-Winfield 1940	Crop District No. 12 ¹		Province of Alberta ¹	
		1940	Average 1921 to 1940	1940	Average 1921 to 1940
	Bu.	Bu.	Bu.	Bu.	Bu.
Wheat.....	22	22	19	22	17
Oats.....	39	40	35	39	32
Barley.....	26	30	23	29	24

¹ Government of the Province of Alberta, Department of Agriculture, Statistics of Principal Grain Crops by Census Divisions, 1921 to 1940, inclusive.

Yields in the Sangudo-Winfield Area vary little from year to year. As indicated in Table 6 the yields per acre for these principal grain crops compare very closely with those of Crop District No. 12 and of the province of Alberta for the year 1940. The twenty-year (1921 to 1940) average yields of the principal crops for Crop District No. 12 and for the province are also given, but these data are not available for the smaller Sangudo-Winfield Area. It is reasonable, however, to conclude that the long-time average grain yields of the Sangudo-Winfield Area were similar to those of Crop District No. 12 for the longer period.

Although the use of legumes and fertilizers is recommended for the improvement of the grey wooded soils, the practice is not common. Around the town of Sangudo some legumes are grown, and also at Breton, where the Soils Department of the University of Alberta has maintained experimental plots for a number of years.¹ It is necessary for a settler not only to maintain the fertility of the wooded soils but also to improve them if he desires to build up an efficient farming unit.

Nationality and Other Characteristics of the Settlers

The settlers interviewed in the Sangudo-Winfield Area represented three main national groups: namely Anglo-Saxon, Western European (Scandinavian, German, French), and Central Europeans including Russians (Table 7).

TABLE 7.—DISTRIBUTION OF NATIONAL ORIGIN OF FARM OPERATORS BY DISTRICTS

District	Anglo-Saxon	Scandinavian German French	Central European and Russian	Total	
				Percentage	Number of Farm Operators
	%	%	%	%	%
Sangudo.....	44	31	24	100	88
Tomahawk.....	23	30	45	100	69
South of River.....	47	33	19	100	83
All Farms.....	39	31	29	100	240

A high percentage of the settlers of foreign nationality was located in the Tomahawk district. Many of the settlers were among the Central Europeans who came to Canada during the period centering around 1929. In the other two

¹ Wyatt, F. A., J. D. Newton and V. Ignatieff, "Wooded Soils and Their Management", University of Alberta Extension Bulletin No. 21, Third Edition, revised July, 1941.

sub-districts, the people of Anglo-Saxon origin formed approximately 45 per cent of the population. A few negroes were farming in the area, which is rather unusual in Western Canada.

Nearly half of the settlers were born in other than English speaking countries (Table 8). A few of the farmers interviewed neither spoke nor understood the English language, but their children did and they acted as interpreters.

TABLE 8.—DISTRIBUTION OF BIRTHPLACES OF FARM OPERATORS BY DISTRICTS

Districts	Alberta	Canada (excluding Alberta)	United States	British Isles	Other	Total	
						Percentage	Number of Farm Operators
	%	%	%	%	%	%	No.
Sangudo.....	6	14	9	20	51	100	88
Tomahawk.....	10	14	15	7	54	100	69
South of River.....	9	22	22	11	36	100	83
All Farms.....	8	17	15	13	47	100	240

Eight per cent were born in Alberta, constituting in the main an overflow from farms in the near vicinity. Canada was the place of birth for approximately 25 per cent, while the British Isles and the United States were the original home of 28 per cent. The balance or 47 per cent were born in non-English speaking countries.

Eighty per cent of all the settlers were married. In Tomahawk, the district with the highest foreign concentration, 93 per cent of the settlers were married (Table 9). The average age of farm operators was 46·8 years.

TABLE 9.—DISTRIBUTION OF FARM OPERATORS BY CONJUGAL STATE, AGE, AND DISTRICTS

District	Conjugal State			Total		Average Age
	Married	Single	Widower and Widow	Percentage	Number of Farm Operators	
	%	%	%	%	No.	Yrs.
Sangudo.....	73	20	7	100	88	50·3
Tomahawk.....	93	6	1	100	69	42·9
South of River.....	77	22	1	100	83	46·5
All Farms.....	80	17	3	100	240	46·8

Definitions of Terms used in the Analysis of the Farm Business

Perquisites: are those non-cash items that the farm contributes to the family living, such as farm produce and fuel, as well as an allowance for the use of the house (rent).

Adult Months: one adult month is the equivalent of one person over fourteen years of age in the home one month; children fourteen years of age or under equal one-half adult unit.

Animal Unit: an animal unit is one mature horse or cow, or the equivalent in other livestock, based upon the amount of feed consumed, manure produced, or other appropriate conversion factors.

Farm Inventory: a farm inventory is a list of the amounts and value of all items of farm property as of a given date.

Farm Capital: is the land with such permanent improvements as are ordinarily transferred with the title of the land, livestock, equipment, feed, other supplies, and cash constituting together a farm operating unit.

Measures of Farm Earnings.—*Family Income from Farm:* is the difference between the year's farm receipts and cash expenses; the latter including capital expenditures, and the former taking into account the change in farm inventory.

Family Net Income from Farm: is the Family Income from Farm less farm family's cash living expenses.

Operator's Labour Income: is the Family Income from Farm less a wage and board allowance for unpaid (family) labour, and also a deduction for the use of capital. (Five per cent was charged for the use of capital in this study.) The operator has in addition the use of the farm perquisites.

Operator's Labour Earnings: is the Operator's Labour Income as defined above, plus the value of the farm perquisites used by the family.

Net Worth: is the total value of all assets (farm and other) less the total liabilities.

Change in Net Worth: is the difference in Net Worth between any two points of time. It is an indication of financial progress or lack of progress.

Type of Farming

The Sangudo-Winfield Area may be broadly described as a mixed or diversified farming district. Differences in the farm organization, however, necessitated the placing of farms into various classes and sub-classes. There are many factors that contributed to these differences in farm organization, as:

1. Climate.—Compared with the prairies, this country is better adapted to the production of coarse grains than to wheat of a high quality.

2. The physical characteristics of the land.—Grain production is associated with good cultivable land, while livestock production is usually associated with poorer arable land, better suited for pasture.

3. The preferences of the operator.—Some farmers preferred producing livestock to raising crops only for sale. It was a matter largely of their individual choice.

4. The stage of development of the farm.—On some farms there had not been sufficient acreage improved to produce anything above that directly consumed by the farm family.

5. Markets.—To the extent that present relatively profitable prices for livestock products are the result of temporary factors, they may have little significance in determining the most profitable type of farming in the long run. If, however, prevailing price rates reflect a permanent change in market conditions they suggest the direction in which adjustments in type of farming will tend to occur.

Two broad classes of farms were first defined and then each divided into three sub-classes. Generally, the farms were classified as being either (1) Subsistence or (2) Commercial.

Subsistence farms were those where either the farm contributed a large share to the family living or else outside income played an important roll in the yearly financing of the operator. A Subsistence farm might be the result of poor land, lack of initiative by the individual, or it might represent a stage in the development of a Commercial farm. It also might be merely a home where a

pension would contribute more to personal living; or the opportunities of the area (such as lumbering) might provide more lucrative employment than would full-time farming.

A Commercial farm was defined in this survey as a unit, organized in such a manner as to give full-time employment to at least its operator and to provide for the family living largely from the sale of surplus products. Such a farm would have but a small proportion of its revenue from outside sources.

For purposes of this study, these Subsistence and Commercial farms were further classified.

Of Subsistence farms, three sub-classes were defined:

1. Self Sufficient: (20 farms) where the value of the perquisites contributed by the farm were more than 75 per cent of the total returns (that is, farm and non-farm returns).

2. Pensioners: (12 farms) were those farms where their operators received a pension amounting to more than 50 per cent of the farm returns.

3. Part-Time: (45 farms) were those farms where non-farm returns received by the operator amounted to more than 50 per cent of the farm returns.

Of the Commercial farms, there were also three sub-classes defined:

1. Field Crops: (18 farms) where the crop returns were greater than the livestock returns.

2. Mixed: (54 farms) where the crop returns were more than 20 per cent of the livestock returns.

3. Livestock: (91 farms) where the crop returns were less than 20 per cent of the livestock returns.

Subsistence Farms

Generally speaking, Subsistence farms had small acreages cleared in the bush, and a house and barn. The extent or value of buildings bore little relationship to the size of farm business. By working in the bush, many settlers had been able to secure materials for buildings in lieu of cash, which frequently resulted in the value of homes being out of proportion to present productivity of the farm.

Land Use.—The most frequently occurring Self-Sufficient farm was, as a rule, a quarter section in size, while the Pensioner and Part-Time farms were somewhat larger (Table 10). All three classes of Subsistence farms were similar

TABLE 10.—PRESENT AND POTENTIAL USE OF LAND IN SUBSISTENCE FARMS
(a) PRESENT USE—AVERAGE PER FARM

Sub-Classes	Number of Farms	Cropland	Farmstead	Total Improved	Total Unim- proved	Total
	No.	Ac.	Ac.	Ac.	Ac.	Ac.
Self-Sufficient.....	20	24	2	26	126	152
Pensioner.....	12	31	2	33	181	214
Part-Time.....	44	38	2	40	176	216

(b) POTENTIAL USE—AVERAGE PER FARM

Sub-Classes	Number of Farms	Im- proved	Unim- proved Arable	Total Arable	Proportion of Total Acres		
					Im- proved	Unim- proved Arable	Total Arable
	No.	Ac.	Ac.	Ac.	%	%	%
Self-Sufficient.....	20	26	92	118	17	61	78
Pensioner.....	12	33	103	136	15	48	63
Part-Time.....	44	40	135	175	19	62	81

in land use. The average amount under cultivation was limited to 40 acres or less per farm, and of the unimproved land, little more than 50 per cent was arable. As already indicated (Table 5) only two or three acres were cleared and broken each year. The crops grown, consisted of a few acres of wheat, oats, barley, and hay. Because of topography, practically all parcels of land have areas that are not arable.

Numbers of Livestock.—There was a limited number of livestock on Subsistence farms (Table 11). From the standpoint of power (horses) the Part-Time farms were the only ones having what might be considered a working unit, or an average of four horses.

TABLE 11.—AVERAGE NUMBERS OF LIVESTOCK AT THE BEGINNING OF YEAR AND SOLD ON SUBSISTENCE FARMS

Sub-Classes	Number of Farms	Horses		Cattle		Hogs		Sheep	
		Beginning of Year	Sold	Beginning of Year	Sold	Beginning of Year	Sold	Beginning of Year	Sold.
	No.	No.	No.	No.	No.	No.	No.	No.	No.
Self-Sufficient.....	20	3	—	7	2	4	7	1	—
Pensioner.....	12	3	—	4	2	4	7	1	—
Part-Time.....	44	4	—	6	2	4	10	3	—

On an average, during the year 1940-41 the three classes of Subsistence farms each sold two head of cattle. The beginning of the year inventory varied from four on Pensioner farms to seven on Self-Sufficient farms.

Of the other kinds of livestock, hogs were the more important. The average beginning of the year inventory of hogs was the same for all Subsistence farms; but sales at an average of ten, were higher for the Part-Time farms. From the standpoint of both the numbers of sheep and the number who kept this class of livestock, the sheep enterprise was of little importance.

Farm Capital.—The amount of capital invested in these farms was quite limited (Table 12). In most cases, the value placed on land by the operator exceeded the price at which it could be sold. The hard work entailed in developing the farm resulted in the settler believing that his land was worth more than the market price at the time of the survey.

TABLE 12.—DISTRIBUTION OF FARM CAPITAL, SUBSISTENCE FARMS, AS OF MAY, 1941

Sub-Classes	Number of Farms	Farm Real Estate	Livestock	Equip-ment	Other Capital	Total
	No.	\$	\$	\$	\$	\$
Self-Sufficient.....	20	1,042	444	280	174	1,940
Pensioner.....	12	1,295	415	296	307	2,313
Part-Time.....	44	1,592	540	382	222	2,736

The Self-Sufficient farms possessed less capital than the other two groups. Possibly this was due to the Self-Sufficient group being of small size, necessitating the limited income being used for current operating and living expenses. The Pensioner and Part-Time farms had other sources of income to supplement farm returns.

Sources of Receipts.—The total farm receipts on these farms were derived mostly from livestock sales, mainly hogs (Table 13). Crop sales formed only a small part of the total income, being even less than that obtained from the sale of farm produce, such as butter and eggs.

TABLE 13.—SOURCES AND AMOUNTS OF RECEIPTS ON SUBSISTENCE FARMS

Sub-Classes	Number of Farms	Cattle	Hogs	Total Live-stock	Crop	Other Farm Produce	Total Farm	Non-Farm	Total
	No.	\$	\$	\$	\$	\$	\$	\$	\$
Self-Sufficient.....	20	53	90	148	39	65	304	14	318
Pensioner.....	12	60	89	154	12	29	226	404	630
Part-Time.....	44	46	126	185	33	52	341	343	684

On Self-Sufficient farms the total farm receipts averaged \$304; only \$14 were received from non-farm sources, making a total of \$318 from all sources. All operating, living and capital expenses must be paid from this small sum. On the Pensioner and Part-Time farms the farm receipts were respectively \$226 and \$341, but actually formed only a part of the settler's income.

Non-farm receipts on the Pensioner and Part-Time farms were respectively \$404 and \$343, or an amount that exceeded the farm receipts. The Pensioners received sums as Old Age and War pensions. The Part-Time farmers derived their additional income from such occupations as lumbering, hauling and various other trades.

Farm Expenses.—In Table 14 the current operating and capital expenditures for the year 1940-41, on the three classes of Subsistence farms, are presented.

TABLE 14.—FARM EXPENSES AND CAPITAL EXPENDITURES ON SUBSISTENCE FARMS

Sub-Classes	Number of Farms	Taxes	Custom Work	Paid Labour	Farm Expenses	Capital Expenditures	Total Farm Expenditures
	No.	\$	\$	\$	\$	\$	\$
Self-Sufficient.....	20	24	29	5	181	54	235
Pensioner.....	12	26	46	2	271	121	392
Part-Time.....	44	33	38	14	345	145	490

The total farm expenses on Subsistence farms followed a trend similar to that of total receipts—but not total farm receipts. Non-farm receipts of Pensioner and Part-Time farms affected both farm expenses and capital expenditures.

Part-Time farmers, at an average of \$14, spent more for hired labour than the other sub-classes. Those that hired labour considered it advantageous to do so, in order that farm work would not interfere with their outside employment.

Operating Statement.—The measures of farm earnings as defined on page 20 are compared in Table 15 for the Subsistence farms.

The farm family income averaged \$136, \$166, and \$157, respectively, for the Self-Sufficient, Pensioner, and Part-Time farms. The net incomes were \$-72, \$-200, and \$-170 for the same farm groups. As the net incomes on

Subsistence farms were negative amounts, the farm business failed to cover the operating and cash living expenses; and consequently did not leave any surplus for payment of debts or for savings.

The operator's labour income is that which remains to the operator for his labour and management, in addition to the farm perquisites. In all sub-classes of Subsistence farms, this amount was negative. The operator's labour earnings were \$266, \$152, and \$136, respectively, on the Self-Sufficient, Pensioner, and Part-Time farms.

Family Living Expenses.—Significantly the Self-Sufficient farms had the lowest cash living expenses of any group of farms (Table 16). This was made up of \$3 per adult month for cash board, and \$2 per adult month for such items as clothes, health, entertainment and insurance. The Pensioner and Part-Time farmers were able to spend more on cash living expenses not because of increased farm receipts, but because of non-farm revenue.

TABLE 15.—OPERATING STATEMENT, SUBSISTENCE FARMS, FOR YEAR ENDED MAY 1, 1941

	Self-Sufficient	Pensioner	Part-Time
Number of Farms.....	20	12	44
	\$	\$	\$
Cash Farm Receipts.....	304	226	341
Increase in Inventory.....	7	193	174
Total Receipts.....	311	419	515
Cash Farm Expenses.....	121	132	213
Capital Expenditures.....	54	121	145
Total Cash Expenses.....	175	253	358
FAMILY INCOME FROM FARM.....	136	166	157
Cash Living Expenses.....	210	367	330
Less Cash Board of Paid Labour.....	2	1	3
Cash Family Living Expenses.....	208	366	327
FAMILY NET INCOME FROM FARM.....	-72	-200	-177
Cash Receipts Non-Farm.....	14	404	343
FAMILY NET INCOME FROM ALL SOURCES.....	-58	204	166
Family Income from Farm.....	136	166	157
Value Unpaid Labour and Board.....	60	139	132
Interest on Capital.....	90	102	125
Total Unpaid Labour and Interest.....	150	241	257
OPERATOR'S LABOUR INCOME.....	-14	-75	-100
Value of Perquisites.....	296	262	277
Less Value of Perquisites to Paid and Unpaid Labour.....	16	35	41
Perquisites to Operator.....	280	227	236
OPERATOR'S LABOUR EARNINGS.....	266	152	136

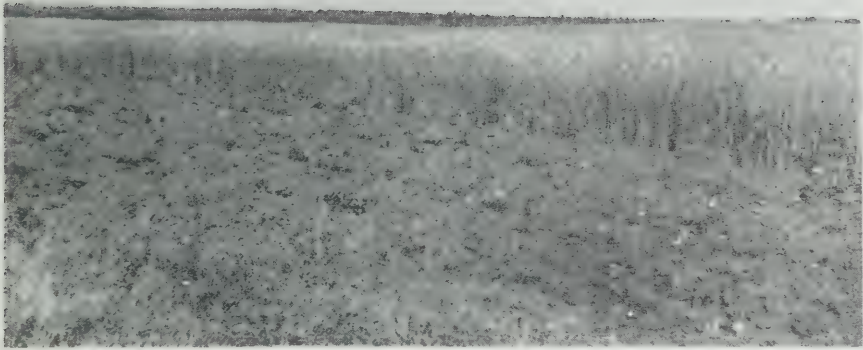


FIG. 3.—A stand of wheat on transition clay loam near the town of Sangudo.



FIG. 4.—An open muskeg in Tomahawk Municipality

TABLE 16.—CASH AND NON-CASH LIVING COSTS ON SUBSISTENCE FARMS

Sub-Classes	Number of Farms	Cash Living Expenses			Value of Perquisites			Total Living
		Cash Board	Other Family	Total Cash	Use of House	Farm Produce Used	Total Perquisites	
	Average per Farm							
	No.	\$	\$	\$	\$	\$	\$	\$
Self-Sufficient.....	20	139	71	210	33	263	296	506
Pensioner.....	12	229	138	367	42	220	262	629
Part-Time.....	44	177	153	330	34	243	277	607
	Average per Adult Month							
Self-Sufficient.....	20	3	2	5	1	6	7	12
Pensioner.....	12	5	3	8	1	5	6	14
Part-Time.....	44	4	4	8	1	6	7	15

The value of perquisites on all farms was practically the same, namely \$7 per adult month. The lower cash living expenses on the Self-Sufficient farms were not offset by a proportionate increase in the value of perquisites.

Net Worth Statement.—Table 17 shows the assets, liabilities and net worth of the farms in the three sub-classes of Subsistence farms. It also shows the change in net worth of the farmers as between the beginning and ending of the business year. The change in net worth is an indication of the success of the year's business.

TABLE 17.—NET WORTH STATEMENT, SUBSISTENCE FARMS, AS OF MAY 1, 1941

Sub-Classes	Number of Farms	Total Assets	Liabilities	Net Worth	Change in Net Worth 1940-41
	No.	\$	\$	\$	\$
Self-Sufficient.....	20	1,940	341	1,599	—66
Pensioner.....	12	2,313	411	1,902	214
Part-Time.....	44	2,736	377	2,359	172

On an average for the Self-Sufficient farms, there was a decrease in net worth amounting to over \$60, whereas for the Pensioner and Part-Time farmers there were increases in net worth of approximately \$214 and \$172 respectively. The explanation for this was the revenue from non-farm sources obtained by the latter two groups, as was indicated in Table 13.

Progress of Settlers since Starting on Farm.—The change in net worth for one year may not reflect progress because of discrepancies caused by current price trends, poor crops and so forth. The change in net worth since the settler started on the farm is a more significant measure of progress. To express this for comparative purposes, the total gain in net worth was divided by the number of years since the settler started on the farm, as shown in Table 18.

There were no significant differences between Subsistence farms with regard to number of years on the farm. The average was ten years.

Self-Sufficient farms had the lowest average net worth at time of starting to farm. Judged by the 1940-41 cash living costs, their level of living was lowest. Yet their progress, measured financially was much slower, being an average of \$65 per year. Pensioner and Part-Time farmers showed a more rapid rate of progress, or respectively \$150 and \$146 per year. However, their average yearly outside income of \$359 and \$178 was an item of importance. Non-farm revenue not only allowed these farmers a higher level of living, but also aided them in increasing their net worth position.

TABLE 18.—PROGRESS OF SETTLERS, SINCE STARTING ON FARM, SUBSISTENCE FARMS

Sub-Classes	Number of Farms	Average Number of Years on Farm	Net Worth Beginning	Net Worth May 1, 1941	Change in Net Worth per Year	Average Outside Income per Year
	No.	Yrs.	\$	\$	\$	\$
Self-Sufficient.....	14	10.7	1,138	1,831	65	46
Pensioner.....	9	9.0	650	1,998	150	359
Part-Time.....	32	10.7	945	2,507	146	178

Summary of Subsistence Farms.—The Subsistence farmers had small acreages under cultivation, and limited amounts of capital invested in the business.

The Self-Sufficient farmers, who depended upon the farm as a source of livelihood, had a very small business turnover, had a lower level of living, showed a negative rate of progress for the business year and a very slow rate of progress since the time of starting to farm.

The Pensioner and Part-Time farmers, who received substantial sums of revenue from outside sources, had a very small business turnover but had a higher level of living, showed a reasonable rate of progress for the business year, and a fair rate of progress since starting to farm.

Commercial Farms

As already stated a Commercial farm, as defined in this survey, is a unit organized in such a manner as to give full time employment to at least its operator and to provide for the family living largely from the sale of surplus products. Such a farm would have only a small proportion of its revenue from outside sources.

Land Use.—The size of the Commercial farm varied from a quarter-section to several sections. The average of the group, however, was between a quarter- and a half-section (Table 19). The Field Crops farms had the largest acreage improved and those specializing in livestock production the least.

TABLE 19.—PRESENT AND POTENTIAL USE OF LAND IN COMMERCIAL FARMS
(a) PRESENT USE—AVERAGE PER FARM

Sub-Classes	Number of Farms	Cropland	Farmstead	Total Improved	Total Unim- proved	Total
	No.	Ac.	Ac.	Ac.	Ac.	Ac.
Field Crops.....	16	82	2	84	163	247
Mixed.....	51	72	3	75	169	244
Livestock.....	89	50	2	52	166	218

(b) POTENTIAL USE—AVERAGE PER FARM

Sub-Classes	Number of Farms	Improved	Unim- proved Arable	Total Arable	Proportion of Total Acres		
					Improved	Unim- proved Arable	Total Arable
	No.	Ac.	Ac.	Ac.	%	%	%
Field Crops.....	16	84	105	189	34	42	76
Mixed.....	51	75	115	190	31	47	78
Livestock.....	89	52	126	178	24	58	82

Approximately 50 per cent of the unimproved land was considered as arable by the farmers. As previously mentioned, the topography of the Sangudo-Winfield Area influences the number of arable acres per farm.

Of the crop acreage on the Field Crop farms, 28 per cent was in "other crops" (Table 20). This included alfalfa and clover as a seed crop to be handled through the seed cleaning plants of the district. Oats, barley and hay were the main crops grown on the Livestock farms. The Mixed farms had over 25 per cent of their acreage in wheat.

TABLE 20.—DISTRIBUTION OF CROPS ON COMMERCIAL FARMS FOR THE YEAR 1940

Sub-Classes	Number of Farms	Wheat	Oats	Barley	Hay	Other Crops	Summer-fallow	Breaking	Total
	No.	%	%	%	%	%	%	%	%
Field Crops.....	16	23	17	10	15	28	5	2	100
Mixed.....	51	25	25	14	13	4	15	4	100
Livestock.....	89	12	26	18	24	4	10	6	100

As with the Subsistence farms, the amount of new land improved per farm was only two or three acres for the particular year under survey. The Commercial farms, however, had considerably more land under cultivation than did the Subsistence farmers. As length of tenure was practically the same for these two groups, it would follow that land was improved at a more rapid rate on the Commercial farms than on the Subsistence farms, during the first years of settlement.

Numbers of Livestock.—Most of the Commercial farms had sufficient horses to furnish their own power. The number averaged from four to five horses per farm (Table 21).

TABLE 21.—AVERAGE NUMBERS OF LIVESTOCK AT THE BEGINNING OF YEAR AND SOLD ON COMMERCIAL FARMS

Sub-Classes	Number of Farms	Horses		Cattle		Hogs		Sheep	
		Beginning of Year	Sold	Beginning of Year	Sold	Beginning of year	Sold	Beginning of Year	Sold
	No.	No.	No.	No.	No.	No.	No.	No.	No.
Field Crops.....	16	4	—	6	3	4	10	—	—
Mixed.....	51	5	—	9	4	11	19	2	1
Livestock.....	89	4	—	11	4	9	21	5	3

The number of cattle averaged six on Field Crop farms, compared with nine and eleven respectively on Mixed and Livestock farms. Sales of cattle however, were relatively the same for all groups.

The Mixed and Livestock farms were similar in hog production, having on hand eleven and nine respectively and selling nineteen and twenty-one. The Field Crops group had only four on hand at the beginning of the year and sold ten.

As on Subsistence farms, sheep on Commercial farms were relatively unimportant.

Farm Capital.—The amount of capital invested in the Commercial farms (Table 22) was approximately twice that invested in the Subsistence units. Of the Commercial group, the Livestock farms have the lowest investment in land and equipment, but the highest in livestock.

TABLE 22.—DISTRIBUTION OF FARM CAPITAL, COMMERCIAL FARMS, AS OF MAY 1, 1941

Sub-Classes	Number of Farms	Farm Real Estate	Livestock	Equip-ment	Other Capital	Total
	No.	\$	\$	\$	\$	\$
Field Crops.....	16	2,501	590	564	504	4,159
Mixed.....	51	2,788	751	780	450	4,769
Livestock.....	89	1,995	913	517	357	3,782

Sources of Receipts.—As a source of farm income, hogs were more important than cattle (Table 23); receipts from hogs being more than twice those from cattle.

TABLE 23.—SOURCES AND AMOUNTS OF RECEIPTS ON COMMERCIAL FARMS

Sub-Classes	Number of Farms	Cattle	Hogs	Total Live-stock	Crop	Other Farm Produce	Total Farm	Non-Farm	Total
	No.	\$	\$	\$	\$	\$	\$	\$	\$
Field Crops.....	16	52	120	174	328	45	602	43	645
Mixed.....	51	99	241	369	166	131	832	65	897
Livestock.....	89	109	292	437	28	116	693	57	750

Field Crop farms received more income from sale of crops than did the other groups, while the receipts from livestock were the greatest with the Livestock farms. However, the receipts from total of crops and livestock were greatest with the Mixed farms, and these averaged the highest gross farm receipts at \$832.

The non-farm receipts were practically the same for the three classes of Commercial farms approximately \$50. This income was derived from work as municipal councillors, logging, road construction, and so on. This non-farm revenue was larger than that earned by those on Self-Sufficient farms, but considerably less than that received by Pensioner and Part-Time farmers.

Farm Expenses.—The total farm expenses (Table 24) followed the same trend as the total receipts; that is, the Mixed farms had the higher average receipts, but costs of operating the farm and expenditures for new equipment were also greater for this group.

TABLE 24.—FARM EXPENSES AND CAPITAL EXPENDITURES ON COMMERCIAL FARMS

Sub-Classes	Number of Farms	Taxes	Custom Work	Paid Labour	Farm Expenses	Capital Expenditures	Total Farm Expenditures
	No.	\$	\$	\$	\$	\$	\$
Field Crops.....	16	42	98	23	364	232	596
Mixed.....	51	48	75	44	460	259	719
Livestock.....	89	38	60	28	425	197	622

The Mixed farms paid more for hired labour during the year than did the other Commercial classes. The Field Crop farms paid more for custom work such as threshing and so forth.

Operating Statement.—The farm family income (as defined on page 22) averaged \$360, \$406 and \$409 respectively for the Field Crop, Mixed, and Livestock farms (Table 25).

The family net income from farm averaged \$72, \$53 and \$183 for the three types of Commercial farm—Field Crops, Mixed, and Livestock. These were the surpluses above operating, capital maintenance and farm family cash living costs, available for paying debts and for savings. To these surpluses must be added the earnings from work off the farm to obtain the total surpluses earned by the farm family.

TABLE 25.—OPERATING STATEMENT, COMMERCIAL FARMS, FOR YEAR ENDED MAY 1, 1941

	Field Crops	Mixed	Livestock
Number of Farms.....	16	51	89
	\$	\$	\$
Cash Farm Receipts.....	602	832	693
Increase in inventory.....	266	178	292
	868	1,010	985
Cash Farm Expenses.....	276	345	309
Capital Expenditures.....	232	259	197
Total Cash Expenses.....	508	604	506
FAMILY INCOME FROM FARM.....	360	406	479
Cash Living Expenses.....	293	361	302
Less Cash Board of Paid Labour.....	5	8	6
Cash Family Living.....	288	353	296
FAMILY NET INCOME FROM FARM.....	72	53	183
Non-Farm Receipts.....	43	65	57
FAMILY NET INCOME FROM ALL SOURCES.....	115	118	240
Family Income from Farm.....	360	406	479
Value Unpaid Labour and Board.....	88	115	116
Interest on Capital.....	190	221	171
Total Unpaid Labour and Interest.....	278	336	287
OPERATOR'S LABOUR INCOME.....	82	70	192
Value of Perquisites.....	255	302	271
Less Value of Perquisites to Paid and Unpaid Labour.....	37	45	39
Perquisites to Operator.....	218	257	232
OPERATOR'S LABOUR EARNINGS.....	300	327	424

A more common measure, however, used in comparing returns from farming is the operator's labour income. For the Livestock farms the operator's labour income averaged over \$100 more than either of the other two types of Commercial farms. For the year 1940-41, the average operator's labour earnings obtained from the Field Crop, Mixed, and Livestock farms were \$300, \$327, and \$424, respectively.

The Commercial farms were in a much better position, with respect to farm earnings than were the Subsistence group.

Family Living Expenses.—Cash board on all Commercial farms was relatively the same per adult month (Table 26). The Field Crop farms spent slightly more on board than did the Mixed or Livestock farms. All groups spent an equal amount on 'other expenses' or \$4 per adult month.

Value of perquisites used on Commercial farms was the same for all groups or \$7 per adult month. This amount was similar to the value of perquisites on Subsistence farms.

On both Subsistence and Commercial farms the expenditures on cash living were quite low. The level of living of the farms surveyed could not, at any time, be classified as high. Apparently perquisites used on the farms were not influenced by the amount spent for cash living expenses.

TABLE 26.—CASH AND NON-CASH LIVING COSTS ON COMMERCIAL FARMS

Sub-Classes	Number of Farms	Cash Living Expenses			Value of Perquisites			Total Living
		Cash Board	Other Family	Total Cash	Use of House	Farm Produce Used	Total Perquisites	
		Average per Farm						
	No.	\$	\$	\$	\$	\$	\$	\$
Field Crops.....	16	164	129	293	58	197	255	548
Mixed.....	51	187	174	361	60	242	302	663
Livestock.....	89	167	135	302	41	230	271	573
		Average per Adult Month						
Field Crops.....	16	5	4	9	1	6	7	16
Mixed.....	51	4	4	8	1	6	7	15
Livestock.....	89	4	4	8	1	6	7	15

Net Worth Statement.—For the farm business year 1940-41, there were increases in net worth of the operators, of all types of Commercial farms (Table 27). The operators of Livestock farms showed the greatest gain. This average was \$223.

TABLE 27.—NET WORTH STATEMENT, COMMERCIAL FARMS, AS OF MAY 1, 1941

Sub-Classes	Number of Farms	Total Assets	Liabilities	Net Worth	Change in Net Worth 1940-41
	No.	\$	\$	\$	\$
Field Crops.....	16	4,159	476	3,683	117
Mixed.....	51	4,769	718	4,051	91
Livestock.....	89	3,782	568	3,214	223

It was noted (Table 17) that for the same year the Pensioner and Part-Time types of Subsistence farms also showed a substantial gain in net worth. However, these groups did not depend on farm income alone, but received considerable revenue from other sources.



FIG. 5.—A corduroy road in Tomahawk Municipality



FIG. 6.—Religious facilities at the settlement of Tomahawk.

Progress of Settlers since Starting on Farm.—The Commercial farmers had been established on the average for a slightly longer period than had the Subsistence farmers. Of the sub-groups, those operating the Field Crop type had the longest average period of residence or 16·3 years (Table 28). As more land is cleared with a longer period of settlement, it is possible that the trend may be towards putting greater emphasis on the production of cash crops.

TABLE 28.—PROGRESS OF SETTLERS, SINCE STARTING ON FARM, COMMERCIAL FARMS

Sub-Classes	Number of Farms	Average Number of Years on Farm	Net Worth Beginning	Net Worth May 1, 1941	Change in Net Worth per Year	Average Outside Income per Year
	No.	Yrs.	\$	\$	\$	\$
Field Crops.....	12	16·3	895	3,531	162	74
Mixed.....	30	12·2	1,119	3,471	194	91
Livestock.....	68	11·1	1,045	3,284	202	78

That is, as the settler brings more land under cultivation, a point may be reached where there is a larger and larger surplus of crops for sale over and above that which may be fed on the farm. With an increase in cropland, there is not as much labour required as for a proportionate increase in the type of livestock farming which appears most suitable in the Sangudo-Winfield Area.

No significant differences were found between the groups respecting net worth at the date of settlement, nor in the amount of income earned from outside sources. This outside income was not as important a factor on the Commercial as on the Pensioner and Part-Time farms.

The rate of progress as shown on the Commercial farms per year, indicates that if an operator makes a full time job of his farm business, he has a reasonable chance of increasing his capital wealth.

Summary of Commercial Farms.—The Commercial farms were those farms that gave full-time employment to at least the operator, and provided a living for the operator and his family, with little or no revenue from sources other than the farm. The measures of farm earnings on the three sub-groups of Commercial farms were positive amounts in all cases (Table 25). The average spent for living on Commercial farms also was approximately the same for all sub-classes.

The Field Crop farms or those farms where the returns from crops exceeded the returns from livestock, had the largest acreage under cultivation. The receipts from the sales of crops were highest on the Field Crop farms, but the gross receipts on these farms were the lowest of the three sub-classes. Farmers in this sub-group showed the slowest rate of progress on present farm, despite a longer period of residence (Table 28).

The Mixed group had the largest gross income of all the sub-classes of Commercial farms. However, higher gross farm, capital and living expenses, plus interest on a larger capital investment for the year 1940-41, resulted in the year's progress being the lowest on this sub-group of Commercial farms. Progress per year, since the settler started on the farm though, was greater on the Mixed than on the Field Crop farms.

The Livestock farms had the smallest acreage under cultivation of all the Commercial farms (Table 19). Receipts from livestock sales were the largest. A small capital investment with limited new capital expenditures gave this group of Commercial farms the highest earnings for the year 1940-41. This sub-class also showed the highest annual rate of progress since the settler started on farm.

Effect of Size of Farm on the Business Returns

The analysis so far presented has indicated that the most common and also the most suitable types of farming in the Sangudo-Winfield Area are mixed crop-livestock and livestock types. Between these types, excluding a few farms that specialize in livestock feeding, there was less difference in organization than between these and other types covered in the study. On these "feeder" type farms hog production was the major enterprise. The acreage in such farms was small and most of the feed was purchased. The very favourable prices received for hogs in relation to the price of grain during the period of this study encouraged this type of activity but it was felt that such an activity was unlikely to become a permanent feature of the farm economy of this area. Therefore in a study of the relation of size of farm to returns, the analysis has been confined to those farms of the mixed crop-livestock and livestock types, with the few feeder farms excluded from the latter class.¹

The effect of size of business is clearly indicated in Table 29, where the farms are grouped according to acreage in cropland. On farms with less than 26 acres the cash farm receipts and inventory increase amounted to \$479. Additional acreage brought increased returns; corresponding returns on farms with 76 acres or more in crops brought in \$1,388 on the average, roughly three times the cash receipts and increase in inventory of the smallest group.

¹ Farms where feed costs exceeded 25 per cent of current operating expenses were considered feeder farms.

TABLE 29.—OPERATING STATEMENT AND RETURNS BY SIZE OF FARM, FOR YEAR ENDED MAY 1, 1941¹

	Size in Cropland Acres			
	Up to 26	26 to 50	51 to 75	76 and over
	\$	\$	\$	\$
Cash Farm Receipts.....	373	549	649	1,141
Increase in Inventory.....	106	242	233	247
Total Receipts.....	479	791	882	1,388
Cash Farm Expenses.....	121	231	281	509
Capital Expenditures.....	78	178	164	419
Total Cash Expenses.....	199	409	445	928
FAMILY INCOME FROM FARM.....	280	382	437	460
Cash Living Expenses.....	201	259	322	431
Less Cash Board of Paid Labour.....	3	7	5	14
Cash Family Living.....	198	252	317	417
FAMILY NET INCOME FROM FARM.....	82	130	120	43
Cash Receipts Non-Farm.....	7	44	60	92
FAMILY NET INCOME FROM ALL SOURCES.....	89	174	180	135
Number of Farms.....	14	31	31	35
Acres Cropland, 1940.....	16	41	61	118
Average Number of Livestock Units (excluding horses).....	7	10	12	12
Average Years on this Farm.....	10	11	12	15
Average Number of Adult Months.....	33	33	41	46

¹ Mixed and Livestock farms only, excluding those where feed purchased exceeded 25 per cent of cash operating expenses.

The farm family income averaged \$280 for farms of less than 26 acres cultivated and \$460 for farms of 76 acres or more. The significance of the difference in earning power of the farms in these two size groups, becomes more striking when it is noted that the latter group had an average capital expenditure of \$419 which was more than five times the capital expenditures of the farms of smallest size. Capital expenditures included purchases of additional machinery, of livestock, of land and its improvement.

There is another measure of contrast to observe in the earning capacity of the farms having over 76 cultivated acres in size and those having less, that is the cash spent on the farm family living. This averaged \$417 or \$9 per adult month for the farms in the largest size group, and only \$198 or \$6 per adult month (Tables 26 and 29) for farms in the smallest size group.

As noted elsewhere, family net income is the surplus above current operating, capital and cash farm family living costs, available for paying debts or for savings; and while the average net income from all sources is slightly less for the farms with 76 cultivated acres or more than for the farms in the two preceding smaller size groups, this may be expected in view of the much higher capital outlay and the greater amount spent on living for the year under review.

The non-farm revenue tended to increase as the area under cultivation increased. It might be supposed that farmers with a small acreage under cultivation compared with those of a large acreage would derive relatively more income from other sources in order to compensate for a low farm income. This was not the case. The larger farms had available farm equipment that could be used on non-farm work at certain seasons of the year. The larger farms also had the



FIG. 7.—School at the Tomahawk settlement.



FIG. 8.—A rural school in the Tomahawk district.

largest families, thus making it possible for some members of the family to absent themselves from the farm and secure non-farm employment.

The farms with more acreage under cultivation have been occupied longer than have the others. On these farms also there were more livestock units, and also more persons per farm supported. From these groups, however, were excluded the more specialized livestock feeder farms.

The analysis of the farms studied in the Sangudo-Winfield Area by type and by size suggests a basis for determining a farm organization and minimum size to provide a reasonable level of living for a farm settler and family in areas comparable with those in the fringe of agricultural settlement of west central Alberta.

A Budgetary Approach to Cultivated Acreage Required to Maintain a Farm and Pay for Land Improvements

The type of farm suggested is a mixed-livestock one. This is not only because of higher returns obtained on this type of farm for the particular year of the study, due in part to the relatively more favourable prices of livestock and livestock products compared with grain, but also to the natural characteristics of the area which indicate more favourable conditions for the livestock type of farming and less for grain type compared with other areas of the province. Among these conditions are a rolling topography with a variety of soils ranging from fertile transition grey-black to the much less fertile grey wooded, and relatively favourable precipitation for crop and pasture growth.

To determine the size of unit on which the average settler may succeed, farm budgets have been set up for various farm acreages. It will be realized that no two farms, even in the large number studied, are exactly alike and consequently the farm businesses analysed serve only as a guide in setting up hypothetical farm organizations and budget statements on these.

Acreage under Cultivation.—Farm budgets on farms of 25, 50, 75 and 100 acres of cultivated land have been worked out. The assumption is that the land is improved to this extent at time of settlement. With power equipment these land improvements would cost approximately \$12 per acre, and it is assumed that this be paid off in fifteen equal annual payments with interest at 5 per cent.

Crop Rotation and Plan.—Although many different kinds of crop rotations are possible, a five-year plan has been chosen for simplicity. The rotation includes a reasonable acreage of legume hay and pasture in order to maintain the soil fertility. The same crop rotation plan is followed for each of the four budget farms.

Livestock.—As noted the budget farms are of the mixed-livestock types. The kinds and numbers of livestock, according to the feed which would be available for the different sized acreages, have been estimated.

Total Land in Farm.—In determining the amount of land necessary to provide for the cropping plan suggested and carry the number of livestock indicated, there are a number of factors to consider. Over a period of years heavier crops may be expected from fertile transition grey-black soils than from soils decidedly grey wooded. A greater acreage will be arable in a level to undulating parcel than in one distinctly hilly and rough. More acreage is required on hillside white soil than on valley transition grey-black soil for pasturing an equivalent number of livestock, provided, of course, both areas are cleared of trees.

The arability of land in the Sangudo-Winfield Area varies. It was estimated that about 75 per cent of the occupied land is arable or 120 acres per quarter section. However, on some parcels of land only 60 or 70 acres are arable. This means that on many quarters it is not feasible to cultivate 75 to 100 acres. These are the occupied quarters. Of the unoccupied quarters, there are fewer which have the several desired characteristics for arable farming. Therefore, a half section has been suggested for the land unit in the organization of the farms for which the budgets have been prepared.

Receipts.—The budget plan is to sell cattle at one and one-half years of age in the fall of the year in order that they might be finished for market on pasture at a low cost. It is estimated that the weight would be 1,000 pounds and that cattle would sell at 5.5 cents per pound. This is the twenty-year average for medium steers up to 1,050 pounds at Edmonton.

In most instances it is assumed that sows raise two litters a year. On the farms with 25 acres cultivated, however, there would not be sufficient feed to raise two litters a year, and allowance is made for raising one litter a year only. Hogs would sell at 200 pounds for 8.5 cents per pound, this being the average twenty-year price at Edmonton for bacon hogs.

Surpluses of cream, eggs and poultry, over and above estimated family requirements, are sold. From the number of cattle and hogs raised, provision is made for some being used on the farm and for some losses.

While in the budget the crops raised have been marketed in total through livestock, it will be realised that there will be years when the ratio of grain prices to livestock prices will be such as to induce farmers to sell some grain and feed less. This may be good business on the part of the farmer, as good farm management seeks to market produce in the most profitable channels. Wheat grown on the grey wooded soils is usually of a lower grade than that grown on the prairies and hence sells at a lower price. However, coarse grain crops grown on grey wooded soils usually sell at as favourable prices as do those grown elsewhere; and there may be opportunity at times of producing other cash crops such as legume seeds.

Expenses.—*Farm Operation.*—Farm operating expenses are itemized in the budgets. Taxes are estimated at \$30 per quarter. It is not considered advisable that on farms with 50 acres or less of improved land, farmers should own either a drill or a binder. A charge for seeding and harvesting on the farms with 25 and 50 acres cultivated is made at the rate of 50 cents per acre for seeding and 75 cents per acre for cutting.

Depreciation.—It is considered that the depreciation rate charged should be sufficient to make necessary replacements over the average life of the buildings and equipment.

Buildings.—It is assumed that all farms should have reasonably habitable homes, and farm buildings should be of reasonable durability. At an estimated value of \$1,000 for the buildings and depreciated at 5 per cent, the depreciation would amount to \$50.

Equipment.—An estimated value of minimum equipment considered necessary is \$800 (second-hand machinery). At 14 per cent, the depreciation on the equipment would be approximately \$112. Depreciation would be somewhat less on the farms with 50 acres and less of improved land, for which it was more economical to hire the seeding and cutting done.

Living.—In the Sangudo-Winfield Area farm cash living expenses amounted to \$8 per adult month. The average farm family is about five persons consisting of two adults and three children, or three and one-half adult months per month. Thus, on the average, cash living expenses amounted to approximately \$340 per year, and this amount is used in the budget. This may be considered as an absolute minimum or a subsistence level.

Family Net Income from Farm.—This is the difference between farm receipts and expenses, including farm and living expenditures.

Non-Farm Income.—Although, in the Sangudo-Winfield Area, non-farm income was greater on the larger sized farms than on the others, there did not appear to be any apparent reason for budgeting more for this item for farms with larger acreages of improved land than the smaller; therefore an estimated \$75 (approximate average of all Commercial farms included in the study of the Sangudo-Winfield Area) is allowed in the budget for non-farm income.

Surplus.—The non-farm income added to the family net income from the farm gives the surplus. In Table 31 it will be noted that surpluses are budgeted for, on the farms with 75 acres and 100 acres under cultivation. For farms with less than 75 acres cultivated, deficits are shown. The surpluses amounting to \$113 and \$193 respectively for the 75 acres and 100 acres improved farms would be sufficient to pay off a debt of \$12 an acre for these improvements in 15 years at 5 per cent and leave a little over. These little-over amounts of \$29 and \$81 respectively, however, would not go far in liquidating another debt if incurred, also, at the beginning in order to erect buildings valued at \$1,000, purchase machinery valued at \$800, and to accumulate the livestock suggested.

It must be noted, too, that the family living cost budgeted for, namely \$340, is a very modest sum; and while for some groups of farms in the Sangudo-Winfield Area, the average living costs were less during the year of the study, this sum would appear to be low enough in laying plans for the immediate future.

TABLE 31.—SUGGESTED BUDGETS FOR LIVESTOCK FARMS OF VARIOUS CULTIVATED ACREAGES

	Acres Cultivated			
	25	50	75	100
	Ac.	Ac.	Ac.	Ac.
LAND USE ¹				
Acres Cultivated.....	25	50	75	100
Acres Unimproved.....	135	110	245	220
Total Acres.....	160	160	320	320
Crop Rotation:				
Wheat.....	5	10	15	20
Oats.....	5	10	15	20
Barley.....	5	10	15	20
Hay.....	4	8	12	15
Pasture.....	6	12	18	25
(Included in Pasture — Summerfallow with cover crop).....	(2)	(3)	(5)	(7)
Total Acres Cropped.....	25	50	75	100
CROPS AVAILABLE FOR FEEDING				
Wheat..... Bu.	92	185	277	370
Oats..... Bu.	185	370	405	740
Barley..... Bu.	115	230	345	460
Hay..... T.	8	16	24	30

¹ Rate of Seeding and Yields per Acre.

	Rate of Seeding per Acre	Yield per Acre
Wheat.....	1.5 Bu.	20 Bu.
Oats.....	3 Bu.	40 Bu.
Barley.....	2 Bu.	25 Bu.
Hay.....	—	2 T.

TABLE 31.—SUGGESTED BUDGETS FOR LIVESTOCK FARMS OF VARIOUS CULTIVATED ACREAGES (concluded)

	Acres Cultivated			
	25	50	75	100
KINDS AND NUMBERS OF LIVESTOCK	No.	No.	No.	No.
Horses.....	2	3	4	6
Cattle:				
Cows.....	2	4	6	8
Calves.....	2	4	6	8
Yearlings.....	2	4	6	8
(Yearlings marketed).....	(1)	(3)	(4)	(6)
Hogs:				
Sows.....	1	1	2	2
Pigs.....	8	16	32	32
(Pigs marketed).....	(6)	(12)	(25)	(25)
Poultry.....	50 to 60	75	100	100
FARM OPERATING EXPENSES	\$	\$	\$	\$
Taxes.....	30	30	60	60
Hardware and Blacksmith.....	8	20	25	25
Repairs to Fences, Wells, etc.....	12	12	25	25
Binder Twine.....	4	8	12	15
Breeding Fees.....	5	10	16	20
Stock Foods.....	5	15	25	35
Feed (grain or hays) purchased.....	35	—	—	—
Fertilizer.....	9	19	28	37
Seed.....	10	20	30	40
Threshing.....	23	47	62	94
Equipment Repairs.....	10	18	25	35
Custom Work (other than threshing).....	19	37	—	—
Hired Labour and Board of Hired Labour.....	—	—	—	40
Miscellaneous.....	7	11	22	34
Total.....	177	247	330	460
OPERATING STATEMENT	\$	\$	\$	\$
Receipts:				
Yearlings sold.....	55	165	220	330
Pigs sold.....	102	204	425	425
Farm Produce: Cream.....	—	50	150	250
Eggs and Poultry.....	25	50	75	75
Total.....	182	469	870	1,080
Expenses:				
Farm Operation.....	177	247	330	460
Depreciation.....	85	125	162	162
Living.....	340	340	340	340
Total.....	602	712	832	962
Family Net Income from Farm.....	—420	—243	38	118
Non-Farm Income.....	75	75	75	75
Surplus.....	—345	—168	113	193
Annual payment for fifteen years at 5 per cent for initial land improvement.....		\$	\$	
		84	112	
Balance left for payment of other debts or for savings.....		29	81	

For the level of living indicated in the foregoing, a settler would need at least 75 acres of cultivated land in addition to some wild land pasture, along with approximately 17 productive animal units,¹ as suggested in the budgets, to pay off the indebtedness created in the improvement of this land for cultivation, under the conditions of farming which have been assumed.

Minimum Capital Necessary to Establish a Farm

It was estimated that one would require a half-section of land in these fringe areas of settlement to build up an economic farm unit. Even assuming that only a nominal payment is required to obtain possession of such land, there would have to be provision made for financing certain improvements. The major improvements would include clearing and breaking 75 acres of land, habitable buildings, a well and some fencing.

It has been estimated in the previous section that the cost of clearing and breaking would run about \$12 an acre or \$900 for 75 acres. The cash outlay for habitable buildings in these woodland regions where logs and lumber may be obtained in the locality would amount to approximately \$1,000. At least another \$1,500 would be required for minimum amount of machinery and other equipment, as well as livestock. Horses could be used for power.

In addition to the \$3,400 capital suggested in the foregoing, additional cash or credit would be required to help meet farm operating and living costs during the first year of occupancy. Possibly \$400 will suffice. From the budget statement submitted in the previous section on a 75 cultivated acre farm, the surplus earnings above farm operating, capital maintenance and family living costs would take care of little more than the payments on \$900 invested in land improvement; so that of the total capital required, namely, \$3,800, the prospective settler should have at least three quarters or \$2,900 in available cash or credit which may be financed out of revenue raised from a larger improved acreage than suggested for commencement of operation, or by other means.

Possibilities of Settlement in the Surveyed Area

The question will naturally be asked, what are the possibilities of settlement in the Sangudo-Winfield Area? It is believed in an area such as this, that one half section of land per settler should be the objective when setting up a farm unit. Settlement in the area surveyed is fairly well stabilized. There are some parcels of Crown and company land available, but not a sufficient number to permit any great influx of settlers.

¹ An animal unit is one mature horse or cow, or the equivalent in other livestock.

PART II

PROBLEMS ASSOCIATED WITH THE DEVELOPMENT AND MAINTENANCE OF RURAL MUNICIPAL SERVICES IN TOMAHAWK MUNICIPAL DISTRICT IN ALBERTA

Introduction

A study was made of the records of Tomahawk Municipality No. 521, in order to determine the ability of the farmer on the frontier of settlement to pay taxes with which to develop and maintain the municipal services which may be considered as essential to a community. Although this Municipal District was organized in 1913 and a number of farmers had taken up land previous to this time, it is, nevertheless, still in a pioneer state. The problems encountered in this municipality from the standpoint of essential services, are considered to be typical of those that will present themselves in new areas yet to be settled.

The main functions of municipal government are the levying and collecting of taxes to be disbursed on the maintenance of essential services within the community. Taxes are levied on land for municipal and school purposes, the sums collected being spent wholly within the district. In addition, social services, educational and wild land taxes are levied by the Provincial Government, the moneys collected becoming a part of the general revenue of the province.

The services, in the main, considered as essential and maintained by the revenue acquired from the municipal tax are: construction and maintenance of roads, administration, health, direct and agricultural relief (of recent years the senior governments have contributed a large share), and all other functions required by the ratepayers, which are purely local in nature. Out of the municipal tax, also, the municipality must contribute its share to the costs of Old Age Pensions and Mothers' Allowances, the direct payment of which is administered by the senior governments.¹

The school tax is levied according to the amount of money requisitioned by the School Division, the whole sum being spent locally on the schools within the Division. These schools also receive a government grant which is paid from the general revenue of the province.

Other sums expended in the area are the road grants received from the Provincial Government (the province contributes towards the cost of construction and maintenance of secondary roads) and the share borne by the senior governments of Old Age Pensions and Mothers' Allowances, with the full amount of the latter being paid directly to the recipient. In recent years, the senior governments also have contributed heavily to direct and agricultural relief.

Taxation

Municipal Taxation.—Table 32 shows that during the past twenty years the population has practically doubled, and due to settlement on homesteads the assessed acreage has likewise practically doubled. The mill rate has more than doubled; but the total net assessment, even with the increase in assessed acreage, has declined. (Net assessment is the total assessment minus statutory exemptions.) The result has been that the current municipal taxes have not increased at the same rate, or, in other words, the tax levy per acre has declined during this period.

In practically every year the amount of taxes collected has been somewhat less than the levy, with the result that by 1940 tax arrears were nearly four times the uncollected amount in 1920. It is the practice of the municipality to allow farmers to do work to the value of approximately 60 per cent of the current taxes plus any arrears.

¹ Senior government, throughout this study, means the Provincial Government, the Dominion Government, or both.

TABLE 32.—ASSESSMENT, TAXATION AND PROVINCIAL GOVERNMENT ROAD GRANTS, 1920 TO 1940. TOMAHAWK M.D. 521

Year	Number of Resident Farmers	Total Assessed Acreage	Net Total Assessment	Mill Rate	Current Municipal Taxes	Arrears of Municipal Taxes at End of Year	Municipal Tax Collections Including Costs	Provincial Government Road Grants
	No.	Ac.	\$		\$	\$	\$	\$
1940.....	485	147,083	571,150	22	12,610	42,077	11,860	507
1939.....	485	151,557	647,932	25	16,221	39,936	16,831	—
1938.....	475	151,557	653,175	25	16,331	39,609	10,998	—
1937.....	470	152,693	659,512	20	13,190	33,609	11,423	—
1936.....	467	151,950	661,330	20	13,227	31,607	7,876	1,700
1935.....	465	153,815	665,137	20	13,319	25,211	9,672	360
1934.....	450	153,345	728,431	20	14,570	20,946	12,272	890
1933.....	420	152,153	724,981	16	11,600	22,542	10,083	—
1932.....	410	149,841	716,961	20	14,339	20,667	16,118	2,000
1931.....	400	149,043	711,755	20	14,235	23,208	13,157	3,510
1930.....	380	139,787	763,957	20	15,279	22,467	9,993	2,745
1929.....	320	123,107	699,985	20	14,000	17,774	13,854	3,541
1928.....	220	103,795	585,966	20	11,720	16,367	10,007	2,649
1927.....	220	103,401	583,536	20	11,671	14,657	11,929	1,870
1926.....	200	—	485,826	20	9,760	15,217	9,256	1,483
1925.....	175	82,356	793,249	12½	9,898	17,552	9,226	1,440
1924.....	140	82,491	794,286	14	11,120	15,381	8,010	1,437
1923.....	250	82,379	794,291	12½	9,928	11,395	7,570	464
1922.....	230	80,903	783,276	12½	9,819	9,757	9,746	1,280
1921.....	220	80,525	779,976	12½	9,778	10,834	9,552	—
1920.....	240	80,611	861,084	10	8,668	9,914	7,364	—

Tomahawk Financial Statements, 1920 to 1940.

School Taxation.—Municipal Districts became levying and collecting agencies for schools in 1931. School taxation, as shown in Table 33, showed a decline in the levy from 1931 to 1938, and thereafter a sharp increase. This

TABLE 33.—SCHOOL TAXES AND PROVINCIAL GOVERNMENT GRANTS TO SCHOOLS, 1920 TO 1940, TOMAHAWK M.D. 521

Year	Number of Schools Operating	Current School Taxes	Arrears of School Taxes at End of Year	Current School Tax Collections	Government Grants
	No.	\$	\$	\$	\$
1940.....	15	8,416	38,889	7,607	6,970
1939.....	15	9,552	36,810	8,045	6,610
1938.....	15	6,343	32,558	6,489	6,885
1937.....	15	5,814	32,186	5,942	6,354
1936.....	15	6,383	31,654	4,491	4,910
1935.....	14	6,152	28,113	4,511	4,751
1934.....	12	6,941	25,252	6,900	4,439
1933.....	11	8,085	27,558	4,650	4,651
1932.....	11	10,913	23,295	11,038	4,725
1931 ¹	10	12,394	23,380	7,684	4,237
1930.....	10	—	17,868	8,150	4,707
1929.....	10	—	16,295	7,689	4,040
1928.....	10	—	13,010	8,298	3,927
1927.....	10	—	12,354	8,089	3,418
1926.....	10	—	10,989	7,665	2,424
1925.....	10	—	14,718	5,993	1,529
1924.....	9	—	11,399	5,020	1,901
1923.....	9	—	9,346	4,997	2,157
1922.....	9	—	7,708	5,456	1,985
1921.....	7	—	6,959	4,490	1,225
1920.....	7	—	6,118	4,688	984

¹ Tomahawk Financial Statements, 1931 to 1940. School District Statements, 1920 to 1930.

increase may be explained in two ways. The Department of Municipal Affairs threatened to place the Municipal District under an administrator unless some efforts were made by the municipality to meet its school requisitions. Apparently the Municipal District had been in a deficit position in this regard for some time. Furthermore in 1938 the Enlarged School Division was formed, and the requisition made on the Municipal District was increased. Prior to 1931 the information regarding the school tax levy was not available, as the school districts levied and collected their own taxes. It will be noted, however, that the arrears of school taxes have steadily increased in the twenty-year period to approximately six times the original amount outstanding. This increase was due to the fact that in most years collections had been less than the levy, plus penalties added to arrears of taxes.

Likewise the Provincial Government school grants have increased by more than six times the amount paid in 1920. This may be accounted for in two ways: grants to some of the schools have been increased, and also a greater number of schools are now operating. In 1920 only seven schools operated as compared with fifteen in 1940.

Provincial Government Taxation.—Table 34 shows the position of the taxpayers with respect to Provincial Government tax levies. The taxes which the Provincial Government levy are:

- (a) Social Service—levy of 3 mills on all land. From 1918 to 1936 called the Supplementary Revenue Tax, the levy being 2 mills.
- (b) Educational—levy of 3 mills on land in an unorganized school district.
- (c) Wild Land—a levy of 2 cents per acre on privately owned land not exempt under the Wild Lands Tax Act. Land subject to taxation under the Wild Lands Tax Act includes all land which is privately owned and not being operated. However, cultivated land is exempted for two years after the last date of cultivation. Privately owned grazing land must be enclosed and grazed by a specific number of stock in order to gain exemption. There are a few other exemptions such as Crown land, schools, churches, and cemeteries.

This tax was originally levied as a discouragement against large land holdings or land speculation. There has been much argument in recent years respecting the justice of this tax, and it is claimed that the country is now old enough and sufficiently settled to consider the period of holding large properties for speculation as past. In fact, the tax was repealed in 1936 but re-entered in the Statutes in 1938.

TABLE 34.—PROVINCIAL GOVERNMENT TAXES, 1920 TO 1940, TOMAHAWK M.D. 521¹

Year	Current Levy	Arrears at End of Year	Collections Current Year
	\$	\$	\$
1940.....	2,295	12,993	1,968
1939.....	2,643	12,470	1,882
1938.....	2,718	11,357	1,748
1937.....	1,939	10,076	1,319
1936.....	1,953	9,205	879
1935.....	1,369	8,086	844
1934.....	1,566	7,365	1,486
1933.....	2,769	6,571	1,334
1932.....	2,770	5,842	4,228
1931.....	2,877	7,798	2,004
1930.....	4,071	6,903	2,259
1929.....	4,195	5,946	3,645
1928.....	3,543	5,331	3,554
1927.....	4,084	5,990	3,495
1926.....	3,769	5,414	3,876
1925.....	5,539	8,126	4,596
1924.....	5,711	6,569	4,766
1923.....	5,758	5,335	4,839
1922.....	6,063	4,179	5,643
1921.....	6,171	4,068	5,626
1920.....	5,836	3,447	5,474

¹ Tomahawk Municipal District Financial Statements, 1929 to 1940.

The current levy of provincial taxes decreased markedly from 1920 to 1940 with the taking over from large holding companies, as settlement expanded, land against which the wild land tax had been levied. It will be noted that an increase in the current levy took place in 1936, when the Supplementary Revenue Tax of 2 mills was changed to the Social Service Tax and increased to 3 mills; also an increase took place in 1938 when the Wild Lands Tax again became operative.

In only two or three years was the amount collected equal to or in excess of the levy; this resulted in the amount of arrears outstanding as at the end of the year, together with penalties, being approximately four times what it was in 1920.

Summary of Taxation.—The preceding three tables thus show the total levy of all direct taxes on land; also shown are the total yearly collections and arrears. Although none of the taxes show any appreciable increase per capita, it is apparent that failure to collect the amount levied has resulted in all cases in increasing arrears.

Expenditures and Liabilities

Municipal Expenditures.—Table 35 shows the major expenditures for which the municipal tax levy was used. It would seem that the administrative costs of the municipality were reasonably low and consistent, particularly in view of the fact that during the twenty-year period the number of resident farmers practically doubled. Public works expenditures did not show any particular general increase.

Public works expenditure was covered by government road grants and labour credits of tax payers who were permitted to work out a portion of their taxes. It will be noted that expenditure for public works was considerably larger than the other items, and is indicative of the large proportion of municipal taxes which ratepayers were permitted to work out.

TABLE 35.—MUNICIPAL EXPENDITURES, 1920 TO 1940, TOMAHAWK M.D. 521¹

Year	Administration Costs	Public Works Expenditures	Municipal, Health, Doctor, Hospital, Drugs	Indigent Relief Payments
	\$	\$	\$	\$
1940.....	2,242	7,125	3,458	436
1939.....	2,960	10,761	2,800	488
1938.....	2,302	5,711	2,970	592
1937.....	2,230	8,089	2,341	655
1936.....	2,796	11,270	1,803	147
1935.....	1,668	6,397	3,387	449
1934.....	1,489	7,039	2,481	835
1933.....	1,233	8,024	1,687	1,262
1932.....	2,397	9,432	3,074	571
1931.....	1,934	13,216	1,525	1,065
1930.....	1,986	9,747	1,718	208
1929.....	1,917	13,144	2,058	110
1928.....	1,643	11,776	1,356	152
1927.....	1,673	11,204	1,004	2
1926.....	1,804	7,895	2,059	46
1925.....	1,333	5,741	1,141	195
1924.....	2,129	4,402	2,100	122
1923.....	1,625	4,381	30	—
1922.....	1,815	8,272	1,018	—
1921.....	1,808	6,045	1,200	50
1920.....	1,630	3,940	1,536	—

¹ Tomahawk Municipal District Financial Statements, 1920 to 1940.

Municipal health services of a doctor, hospital, and drugs show a more or less general increase in expenditure. Because of the isolated position of the Municipal District with respect to centres possessing medical services, the municipality feels compelled to maintain a doctor. At the present time the doctor receives an annual salary of \$1,800 plus \$400 for a car allowance, a free house, and fuel. Payments are made out of the general revenue of the municipality. However, a service charge is made by the Municipal District against the residents, at the rate of \$2 for a visit and \$1 for an office call. This service fee in many cases is not collected and is carried on the municipal books as a debt of the individual to the municipality.

Indigent relief is relief for which the municipality is wholly responsible. Such relief does not appear to have been at any time an unusually heavy expenditure, although it does follow the trend of the general relief picture. Even in good times there are certain people that are a burden to the community; consequently this expenditure within reason may be considered to be a normal anticipated expenditure.

Municipal Liabilities.—Table 36 showing major liabilities with respect to essential services is important. It may be assumed that these liabilities have accumulated because of a lack of cash to pay for them when they were due.

TABLE 36.—MUNICIPAL LIABILITIES, 1920 TO 1940, TOMAHAWK M.D. 521¹

Year	Health	Old Age Pensions, Mothers' Allowances, etc. Social Services	Indigent Relief
	\$	\$	\$
1940.....	5,257	2,663	60
1939.....	5,760	2,060	128
1938.....	4,144	1,858	124
1937.....	2,472	1,448	63
1936.....	849	834	—
1935.....	2,513	634	118
1934.....	2,069	374	150
1933.....	1,271	168	87
1932.....	182	—	—
1931.....	819	166	327
1930.....	715	63	64
1929.....	1,232	10	10
1928.....	290	—	—
1927.....	—	—	—
1926.....	—	—	—
1925.....	749	—	—
1924.....	576	65	—
1923.....	1,755	40	—
1922.....	—	50	—
1921.....	850	125	—
1920.....	—	75	—

¹ Tomahawk Municipal District Financial Statements, 1920 to 1940.

The municipal debt on account of health service had increased to over \$5,000 by 1940. A large proportion of this debt is due Edmonton hospitals; and although records available do not show the amounts, it may be said that a large part of hospital debt has been written off by the hospitals.

Old Age Pensions and Mothers' Allowances.—Old Age Pensions and Mothers' Allowances show a definite increase in indebtedness. Prior to 1929 the senior governments were not responsible for a share of this expenditure. It is evident (Table 37—accumulated Municipal District indebtedness) that for four years after 1929 the Municipal District attempted to meet its share of the burden, but since then no payments have been made on this account by the District.

TABLE 37.—OLD AGE PENSIONS AND MOTHERS' ALLOWANCES, 1929 TO 1940,¹
TOMAHAWK M.D. 521²

Year	Total Paid Annually	Municipal District Share	Senior Governments' Shares	Payments by Municipal District	Accumulated Municipal District Indebtedness
	\$	\$	\$	\$	\$
1940.....	3,355	335	3,020	—	2,553
1939.....	3,491	349	3,142	—	2,218
1938.....	3,879	410	3,469	—	1,869
1937.....	3,079	325	2,754	—	1,458
1936.....	3,150	399	2,751	—	1,133
1935.....	2,395	360	2,035	—	734
1934.....	1,755	205	1,550	—	373
1933.....	1,685	168	1,517	179	168
1932.....	1,794	179	1,615	166	179
1931.....	1,662	166	1,496	94	166
1930.....	939	94	845	10	94
1929.....	100	10	90	—	10

¹ Differences between Table 36, column "Old Age Pensions, Mothers' Allowances, etc., Social Services" and Table 37, column "Accumulated Municipal District Indebtedness" result from the fact that the Provincial Government's year ends March 31 and the Municipal District year ends December 31.

² Provincial Government records, 1929 to 1940.

Unemployment and Indigent Relief.—Unemployment and indigent relief, it appears, were not an excessive burden on the Municipal District until the depression years, and particularly until the frozen-crop year of 1935, when a sharp increase may be noted in both relief payments and indebtedness (Table 38). Since 1929 the senior governments have assumed responsibility for a share of the relief costs, and in 1935–36 and 1936–37 they met all of the unemployed relief costs and debited the Municipal District with their share. This accounts for the rapid rise in the Municipal District's indebtedness in that year; and to date the municipality has been unable to liquidate the amount outstanding.

TABLE 38.—UNEMPLOYMENT RELIEF, 1930 TO 1940, TOMAHAWK M. D. 521¹

Year	Unemployed Relief			Municipal Debt to Provincial Government
	Total	Senior Governments	Municipal Government	
	\$	\$	\$	\$
1940.....	249	199	50	4,630
1939.....	985	738	247	4,630
1938.....	1,487	904	583	4,638
1937.....	1,032	630	402	4,635
1936.....	7,061	4,532	2,529	4,242
1935.....	5,969	4,138	1,831	1,709
1934.....	416	258	158	—
1933.....	709	473	236	—
1932.....	790	428	362	—
1931.....	269	179	90	—
1930.....	77	50	27	—

¹ Provincial Government records, 1930 to 1940.

Indigent relief liabilities appear to be quite low (see Table 36), indicating that the Municipal District has kept the accounts well paid up. The liabilities listed are mostly small store accounts of relief recipients, which are carried forward into the following year. It might be noted, however, that on more than one occasion the Provincial Government has had to guarantee the store accounts before the merchants would issue indigent relief.

Agricultural Relief.—Table 39 shows the position of the municipality with respect to agricultural relief. According to Provincial officials, the sums

TABLE 39.—SEED, FEED, AND FODDER RELIEF, 1920 to 1940, TOMAHAWK M. D. 521¹

Year	Total Advanced to Farmers	Total Repayment by Farmers	Total Owing by Farmers End of Year	Total Owing by Municipal District to Bank or Govern- ment End of Year
	\$	\$	\$	\$
1940.....	26	242	5,574	5,234
1939.....	8	124	5,790	5,240
1938.....	67	725	5,906	5,449
1937.....	151	1,303	6,563	6,022 ²
1936.....	5,547	1,047	7,328	6,836
1935.....	1,218	171	1,740	1,085
1934.....	—	65	613	—
1933.....	67	64	637	—
1932.....	30	45	594	—
1931.....	—	225	568	—
1930.....	187	498	745	—
1929.....	423	195	1,280	—
1928.....	454	76	962	—
1927.....	275	526	522	—
1926.....	137	658	806	632
1925.....	50	223	1,268	1,608
1924.....	—	447	1,321	1,536
1923.....	220	68	1,791	1,524
1922.....	62	537	1,507	1,539
1921.....	65	321	1,897	1,954
1920.....	2,267	1,624	1,992	1,938

¹ Tomahawk Municipal District Financial Statements, 1920 to 1940.

² During the winter of 1935-36, the Provincial Government gave direct feed relief valued at \$2,633; balance outstanding December 1941, \$1,533. This is not a Municipal District responsibility.

advanced or outstanding at any one time are not large when compared with accounts in other municipal districts. Here again the years 1935 and 1936 indicate that fairly large advances to farmers were necessary, and to date neither the farmers nor the municipality have been able to liquidate this indebtedness. In addition in 1935-36 the senior governments made advances directly to farmers, for which the municipality is not responsible—the Provincial Government has collected part of this advance.

Senior Governments' Receipts from and Contributions to the Municipality

Table 40 is a summary taken from the preceding tables and shows the relationship of the senior governments' receipts from and contributions to the municipality. It will be noted that the Provincial Government's receipts have, for the most part, continually declined. The reason is as stated before, as settlement expanded, land was taken over from large holding companies and revenue from wild lands decreased. Evidently in the early years of settlement, the land holding companies rather than the resident farmers were the main contributors to the taxes levied by the Provincial Government.

On the other hand the senior governments' contributions were increased markedly. These increases were required to take care of school grants, greater numbers requiring Old Age Pensions and Mothers' Allowances, and unemployment relief.

The accumulated indebtedness of the municipality to the senior governments increased decidedly in recent years, owing to the Municipal District being unable to pay its share of Old Age Pensions, Mothers' Allowances, and unemployment relief; also the municipality is indebted for seed, feed and fodder relief advanced to them by the senior governments.

TABLE 40.—SUMMARY OF SENIOR GOVERNMENTS' RECEIPTS FROM AND CONTRIBUTIONS TO TOMAHAWK M. D. 521, 1920 TO 1940

Year	Provincial Taxes Collected by Provincial Government	Senior Governments' Contributions to Municipal District ¹	Accumulated Indebtedness to Municipal District to Senior Governments at Year End ²
	\$	\$	\$
1940.....	1,968	10,696	12,417
1939.....	1,882	10,480	12,088
1938.....	1,748	11,255	11,956
1937.....	1,319	9,738	12,115
1936.....	879	13,893	12,211
1935.....	844	11,284	3,528 ³
1934.....	1,486	7,137	373
1933.....	1,334	6,641	168
1932.....	4,228	8,768	179
1931.....	2,004	9,422	166
1930.....	2,259	7,347	94
1929.....	3,645	7,671	10
1928.....	3,554	6,576	—
1927.....	3,495	5,288	—
1926.....	3,876	3,907	632 ⁴
1925.....	4,596	2,969	1,608
1924.....	4,766	3,338	1,536
1923.....	4,839	2,621	1,524
1922.....	5,643	3,265	1,539
1921.....	5,626	1,225	1,954
1920.....	5,474	984	1,938

¹ Road grants and school grants; share of Old Age Pensions and Mothers' Allowances; share of unemployment relief.

² Share of Old Age Pensions and Mothers' Allowances; share of unemployment relief, seed, feed, and fodder.

³ Winter 1935-36 in addition the Provincial Government gave direct feed relief valued at \$2,633; balance outstanding December 1941, \$1,533. This is not a Municipal District responsibility.

⁴ 1920 to 1926. Feed, seed, and fodder owed either to bank or Provincial Government.

Conclusions Related to Tomahawk Municipality

Some conclusions may be drawn from the foregoing series of data respecting Tomahawk Municipality. For the majority of years the current levy of taxes had not been collected in full which resulted, with added penalties, in an ever increasing amount of tax arrears. This may, in part, have been due to a lack of rigid enforcement of collections; and it may also have been caused by farmers receiving insufficient income with which to pay taxes. In any event the fact remains that tax delinquency resulted in increased tax arrears. The delinquency occurred even without any increase of taxes levied per resident farmer or per acre.

A principle appears to have been followed in municipal taxation, that approximately 60 to 70 per cent of the municipal revenue could be used for public works expenditures. This principle is sound where the density of population and the productive qualities of the land are sufficient to form a tax base from which a large revenue can be obtained by the levying of municipal district taxes. However, where the population is sparse and farm income low, the total amount of taxes collected is necessarily small. In Tomahawk approximately 60 per cent of the receipts on account of municipal taxation is being expended on public works; and this 60 per cent is being collected by farmers working out taxes rather than in cash. The result is that the amount of cash collected is not sufficient to meet the requirements for essential services.

Considering the large proportion of the municipal tax levy which was spent on public works, roads are poorly maintained and often lacking. This would seem to indicate that the municipality has not received the equivalent in work that it allowed on taxes.

In proportion to the whole income, the cash income of the municipality was too small and the amount spent on public works was too large. As shown in Table 36, debts were created for hospital, medical, and other services because there was a lack of cash to pay for these services. Part of this debt has already been written off. Indebtedness for Old Age Pensions and Mothers' Allowances, as shown in Table 37, has continually increased because the Municipal District has either not been able to, or has been lax in meeting its share of the costs.

The direct and agricultural relief experience indicates that when an extraordinary expenditure cannot be met out of current revenue, the result is a debt which the municipality is unable to retire in subsequent years.

Although the liabilities of Tomahawk are fairly small and not beyond reason, the trend of tax collections and municipal costs and expenditures indicate that they cannot easily be retired.

In 1938 the Enlarged School Division, No. 23, was formed of which all of the schools of Tomahawk became a part. Under this system all schools are administered from one central office, the Municipal District concerned being requisitioned for sums of money for maintaining of educational services in the Division. When a school is built, it is paid for out of the revenue of the Enlarged Division. This probably accounts for the fact that in the settlement of Tomahawk in 1939 a new stucco school was built having both public and high school facilities.

At the present time the Provincial Government is introducing a policy of Enlarged Municipal units within the province. Municipal District 521 (Tomahawk) has recently been amalgamated with No. 520 (Inga) and No. 519 (Spruce Grove). This new unit is approximately twenty miles wide by seventy miles long, and includes within its boundaries both semi-urban development and pioneer homesteading. Municipality, No. 519, is immediately west of Edmonton and may be classed as semi-urban; No. 520 is a well developed farming area in the Stony Plain district; and No. 521 is a municipality still in the pioneer stage and with few local improvements. By this merger the Provincial Government hopes to be able to eliminate some of the problems confronting Tomahawk Municipality, which have been mentioned. It hopes also, that the merger will eliminate some of the problems facing the other two municipalities. The main benefits expected from this amalgamation are lower administration costs and a fuller use of road machinery with cheaper and more efficient road construction.

